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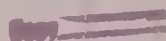
In This Issue

**The Documentary Technique
In Hollywood**

The Camera is a Weapon

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THE MOTION PICTURE CAMERA MAGAZINE

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The Front Cover

This month's intriguing cover was photographed by Frank Tanner who won four prizes in the recent Third Annual Still Photography Show sponsored by the Academy of Motion Picture Arts and Sciences. It shows Director Rene Clair telling Cameraman Archie Stout, A.S.C., how he wants him to shoot down through a fog into a tank of water in which Linda Darnell and Dick Powell are immersed for a scene in his picture, "It Happened Tomorrow," which Arnold Pressburger is producing for United Artists release. Stout's camera had to follow the players in a dive from fourteen feet above into the water, and catch them as they came to the surface.

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Left is George Pal with one of his puppets which he carves out of solid wood, then makes them perform against backgrounds of actual miniature sets. Above is one of his miniature sets for "Mulberry Street," constructed with all the care that goes into the creation of large sets for feature pictures.

A Place Called Mulberry Street

By ALVIN WYCKOFF, D. Sc., A. S. C.

DO you know Mulberry Street? Not Mulberry in London nor in Los Angeles, but Mulberry Street of New York.

"And that is a story that no one can beat, when I say that I saw it on Mulberry Street."

It's a funny thing, isn't it, how the germ of a story, a charming fantasy, can spring up out of the mixing bedlam of such a conflict of noises and pungent odors; from out of an environment of dull aches and bitter, competitive struggle, a lovely dream to smoulder into poetic rhythm: and why not? Wasn't the dream of Cinderella inspired within the realm of a dismal kitchen of blackened walls and a hearth of cold ashes?

It was out of the bedlam of Mulberry Street that Dr. Suess created his fantasy of "What I saw on Mulberry Street"; the dream of a little boy trying to tell what he saw on his way home from school: An old junk wagon rolling along over the dirty cobbled street, pulled by an ancient nag and driven by a corroded looking junk dealer, transformed into a heavenly blue chariot and brave charioteer driving a reindeer.

Through the genius of George Pal and his merry Puppetoons the little boy's vision is brought to life.

Against a weathered and smoke darkened set that looks as real as lower New York itself, we look at Mulberry Street from Fourth to Sixth. From out of the dull, drab atmosphere the little boy's

vision dissolves into beautiful sequences of Technicolor richness.

The stringless puppets romping and cavorting along the "Street" represent the ultimate advancement in the field of animated motion pictures. Little wooden figures of true third dimension, romping through backgrounds of actual sets to the tune of synchronized music and sound effects, washing away the troublesome problems of adults and delighting the mirthful hearts of children. It's playtime for everybody.

What has taken a few moments of playtime to refresh the soul from the distressing thoughts of a world at war has cost George Pal and his technicians hours and days of toil; but they have toiled mirthfully, that's why happiness is so well reflected in the antics of the Puppetoons.

Unlike cartoons that require a separate drawing on celluloid for each movement, George Pal must build a separate wooden figure. The result gives a more fluid action with the theatrical advantage of complete third dimension.

Vast sums of money have been expended to develop animated mediums but in spite of the most careful measures taken to give wooden, plastic and clay figures smooth animation, the problem remained unsolved until George Pal developed and perfected his little wooden figures.

Pal's first experiments with animated objects consisted of cigarettes. He painted faces on them and they became

his first actors and extras. Cigarettes were inexpensive—then. That was in Prague, Czechoslovakia. The sale of cigarettes was a state monopoly. He tried to induce the officials to use his acting cigarette puppets for advertising shorts but being a state monopoly they decided they could get along without advertising. So he went to Paris and sold his idea to the first tobacco concern he approached and made his first successful Puppetoon motion picture.

The word "Puppetoon" is derived from PUPPET and CARTOON. "Puppetoon" is the registered trademark of George Pal Productions, Inc.

Pal's method of creating an illusion is similar to Walt Disney's, except that George Pal uses a carving knife, whereas Walt Disney uses a crayon. Disney draws his figures on paper and puts them on celluloid; Pal carves them out of solid wood and makes them perform against backgrounds of actual miniature sets to get them on celluloid.

Each little figure is made by hand. It is the job of Pal's woodworkers, with lathes and carving tools of the finest, to bring into form the little figures and thousands of separate parts. His craftsmen are highly skilled. They have to be in order to create the accuracy demanded by Pal. It's painstaking labor.

Some of the figures are very small. Others; three, four, six inches tall; close-ups demand larger figures and heads. If the story demands a smile, then ten to fifteen heads of the smiling figure must be made to complete the series of the smile. Large or small, all heads and bodies and parts must match the acting figure perfectly down to the most minute detail to 1/1000 inch.

The figures are placed on the miniature set and photographed by an especially designed Technicolor camera; the final result will be that of third-dimensional live action.



Around 9,000 little figures are required to produce the syncopated sequences of one Puppetoon production that will flash over the screen from seven to ten minutes and will represent a cost of around \$25,000.

Speaking quietly, Pal said, "When I want one of my leading ladies to smile or make eyes or let the hero hold her hand. I must fashion at least twenty-eight girls, each as a different phase of the cycle of action she must complete as well as other movements that must coordinate."

The entire setup of Pal's organization is a highly personal one. Whereas Disney must maintain a working staff of around six hundred people on his payroll, incorporated in a vast array of buildings known as the "Disney Studios" the miracle organization of Pal's consists of only forty-five employees housed in a converted garage, no ornate trimmings, no tough policemen.

Everyone knows that in screen cartoons animation is obtained by photographing a number of separate drawings, each one representing a different step in a particular action. Puppetoons, require a series of solid figures to represent the different stages of a particular action.

A kiss of only an instant duration on the screen may have called for forty-eight man hours to produce; twelve to fifteen, perhaps more, little figures must be made, matched exactly, and skillfully manipulated to complete that little kiss. Think of it; What a whale of a lot of work for just a—little kiss. If it's a wink, or a smile, then ten or fifteen heads in close-up will have to be carved for the sequence. That's a lot of work for a wink and a little more for a kiss; either of them should be worth something. Some folks don't smile in a lifetime but Pal's organization is full of smiles, that's why the little wooden actors are so realistic.

But of all the heads and figures, large or small, the most painstaking work is in the fashioning of the coordinating parts that work with each figure through its action sequences; they must

Upper left is another set showing lower New York with an old junk wagon, an ancient nag and a dirty cobbled street. Upper right is an artist applying the necessary color to the finished puppets. Lower right, a miniature expert is at work building houses.



match perfectly in every detail or the illusion of reality will be seriously disturbed.

Puppet arms can be made of flexible material and are animated by trained artists who have a very sensitive skill for maintaining minute registration as they manipulate the figures through their sequences.

Each new production, like the feature productions of a major studio, inherits new problems that must be overcome. In one of Pal's productions, "Rhythm in the Ranks," the story called for a large number of marching soldiers. It was decided that so many figures working in unison in one sequence could be cast from a special composition instead of carving each soldier separately from wood. The idea worked and created a new method for figures en masse. And so it goes with each new problem, each

in turn being solved by Pal and his staff of skilled technicians.

After the Puppets have been assembled, the cast complete, they must go to the "make-up" room where painstaking attention is concentrated upon each figure and its parts for the right coloring. Every line, every facial blending, must be done in exactly the right place and with the correct color blended on each character and its coordinating members, otherwise the lines and blendings would wriggle and jiggle around on the screen nervously: the slightest deflection of line or color would cause an unpleasant mental disturbance that would destroy the reality of the action.

Except when dealing with fantasy, Pal maintains a policy of keeping all designs authentic and adheres strictly to scientific fact.

(Continued on Page 33)





The Academy Still Show

By HAL HALL

THE Third Annual Hollywood Studios' Still Photography Show, sponsored by the Academy of Motion Picture Arts and Sciences, this year proved to be one of the outstanding photographic events of the country, with 300 prints selected from more than 600 entries. Tastefully hung in the foyer of the Columbia Broadcasting System's Hollywood studios, they were viewed by more than 10,000 persons in the five-day showing.

This show emphasized one thing in outstanding fashion: the fact that the still photographers in Hollywood studios are really artists, for all the work on display was made in the course of their every day job of making photographs of pictures actually in production. Many of the prize winners were pictures that had been made hurriedly while a director impatiently stood by urging the still man to hurry so he could get to the next scene.

Contrast that method to that of artistic photographers who spend hours making a single picture for an exhibit and you get a fair idea of the artistic ability of the average studio still camera-man. In the opinion of this writer, the Academy exhibit will not only stand up against any other photographic exhibit in the country but will outrank most of them by a wide margin.

The exhibit brought out the true feelings of Americans when it was disclosed at the end of the exhibit that the picture which polled the highest vote in the popularity voting by those who attended was a picture of a boy and his dog (Lassie and Roddy McDowell), by Clarence Bull. While America has thought that our service men like only "pin-up" art, the ballots showed that the service men who attended voted overwhelmingly for the boy and dog picture, even though there were many intriguing "pin-up" pictures on display.

The exhibit is now on a tour of many

The prize winning photographs on page 8 are: Top, left to right, Best male portrait, Best female portrait, Best portrait of two persons. Center, left to right, Best Candid Shot, Best Poster Art and also winner of the popularity prize, Best Fashion Study.

Bottom, left to right, Best Character Study, Best Glamour Picture, Best Picture in relation to the War Effort.

On this page, top left, Best Outdoor Action Production Still; top right, Best Outdoor Posed Production Still; center, Best interior Action Production Still; bottom, Best interior Posed Production Still and also judged "Best of Show."



principal cities of America, and we unhesitatingly urge that you do not miss it if it comes to your city. Incidentally the 1941 exhibit is still touring in Russia and Australia.

Following are the winners by specifications:

(1) BEST PORTRAIT

A. Male

First Prize—Fred Hendrickson of Randolph Scott in "Bombardier," RKO.

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NOTE: One of the most outstanding events of its kind was the recent Writers Congress, jointly sponsored by the University of California and the Hollywood Writers Mobilization, and held on the Los Angeles campus of the University. Some fifteen hundred people attended the sessions over a three-day period. A particularly interesting and provocative meeting was the seminar on the Documentary Film. One of interesting papers presented was by Mr. Howe, which we are pleased to present to the readers of the American Cinematographer through the courtesy of the Writers Congress. At left we see Mr. Howe being sketched by an artist while at work. The Editor.

Camera went right into the homes of the people to get backgrounds. No modern sets or electrical equipment were used.

From time to time, Hollywood released films showing documentary treatment, such as *Nanook of the North*, *Grass*, *Taboo*, *Man of Aran*, *Elephant Boy*, and others.

The realism of *All Quiet on the Western Front* still stands.

Since then, there have been further examples of the documentary influence: *Grapes of Wrath*, *Mission to Moscow*, and the English films, *To the Victor* and *The Stars Look Down*. It is interesting to compare the latter film with *How Green Was My Valley*. Though both dealt with the same subject, both were fine films, *The Stars Look Down*, realistically treated, was, to me, the better film.

Obviously a musical or a fantasy should not be criticized in terms of its realistic value, but a story with true-to-life subject matter profits immensely from a documentary treatment.

In the film "Airforce," for instance, the director, Howard Hawks, asked for a realistic camera treatment. He wanted a minimum of unnatural lighting. He wanted it to look as if the camera were grinding away on a real airfield or inside a real plane. No phony acrobatics. No unnecessary dollies, or panning, or other artificial movement.

Many scenes were photographed with Eyemos, a small hand camera. The use of such cameras in this picture, incidentally, proved their effectiveness.

For only one example: in some of the most spectacular explosion shots, say, the bombed ships at sea, I directed an operator to shake his camera as if from concussion, let the actors blur out of focus, and tip the camera sharply as the decks tipped high into the air. This gave the audience a sense of real participation—an effect, difficult, even impossible to get with a big camera.

Despite these and other attempts, the average audience was practically unaware of the documentary method before the war began. He saw newsreels, *March of Time*, and possibly a few short subjects, but his real awareness began only when nations began to record on film the history of their countries at war.

He began to see documentaries from England and Russia, and, to a certain extent from Germany. Magazines like

The Documentary Technique In Hollywood

By JAMES WONG HOWE, A. S. C.

IN a fairly recent Russian documentary there is a remarkable shot. In the foreground is the narrow slit of a cellar window. Silhouetted against the window is the helmet of a Russian sniper. The background is the street outside—a jumble of battle-shattered buildings.

A German soldier emerges cautiously from the cover of a wall. The sniper aims carefully. The rifle barrel kicks as he pulls the trigger. And in the background the German crumples under the impact of the bullet.

It is not easy to accept the presence of the camera, which must have been shooting from a few feet behind the sniper's head during the action. Despite the hundreds of thousands of feet of battle shots being shown, we are not accustomed to seeing such an intimate picture of a man's death.

Yet we don't question its authenticity. The sniper is real. The kick of the rifle is real. The death of the Nazi is real.

The reason is that every detail—the factors we refer to as Performance, Set, Camera, Lighting, Timing—every detail is perfect.

Perfect, that is, in realistic terms.

Certainly, not perfect in Hollywood terms. The face of the Russian sniper is never seen. Nor does the half-light of the cellar provide any convenient highlights on his helmet.

The background is not picturesque. Just a confusion of collapsed walls. And the only performance quality in the German's death is the quality of simple finality.

The average Hollywood staging of this scene would remedy these "defects." If the actor were prominent enough, an angle of the sniper's face would be featured. His helmet, and perhaps the barrel of his rifle, would have the benefit of highlights. At the instant of firing, the camera focus would change, and the German would die picturesquely in a beautifully sharp background.

A technical improvement? Yes. But, instead of the camera recording the actual death of a man, it would emerge as an actor recording a hypothetical death for the benefit of the Camera.

There have been, of course, many indications of documentary technique on Hollywood films. As far back as the 20's, Jesse Lasky produced a film which was shot in the Tennessee Mountains. The



The New Acme-Dunn Optical Printer

By LINWOOD DUNN

1st Cinematographer, RKO Radio Pictures, Hollywood

OPTICAL printer design has never been standardized due to the fact that the machines have been custom built to fit the requirements of each set-up. Furthermore, the ideas behind the design of each machine are so varied that a first-class optical cameraman would find it extremely difficult to go from one machine to another without changing many of his methods of working. Most of the printers I have seen have suffered in design by the evident lack of influence in ideas from the man who runs the machine. Very often the project of building an optical printer is

completely turned over to the machine shop. The result is usually an excellent job from a mechanical standpoint, but sadly lacking from an operative one. The evident lack of close association between the mechanical designer and printer operator is constantly felt, with the latter bearing the burden, as he is the one ultimately responsible for the quantity and quality of the work turned out.

In the Acme-Dunn Optical Printer I have endeavored to design a machine which can efficiently handle all of the varied requirements of the major motion picture studio, based on my experience

in this work for the past fifteen years at RKO Radio Pictures. Ease of operation has been the first consideration in the design of this machine, and through the untiring efforts of the engineers of the Acme Tool & Manufacturing Company of Burbank, California, no serious mechanical difficulties were encountered in obtaining the features desired.

The Acme-Dunn Optical Printer is of radically new design, as can be seen by the accompanying illustration. All operations and adjustments can be made from the one side of the machine without moving more than one step. The camera is designed especially for optical printing, and is an integral part of the machine. Great rigidity is obtained by the cast iron base and housing, and by the minimum distance between the optical center and camera base. All the conventional optical printing transitional effects such as lap dissolves, wipe-offs, slide-offs, etc., can be easily made with great flexibility of operation, to fit any special footage requirements, and can be either manually or mechanically driven. Automatically focused "zoom" or dolly shots can be made by simply turning one wheel, or engaging it with the accessory (wipe-over) drive for any speed of mechanically driven dolly. The range of this move-up is from full screen to less than the field of a 16mm frame. The focusing cam can be disconnected to make out-of-focus dissolves, which are often used for retrospect transitions. These effects can be made by moving either the lens or camera, independently of each other. The camera and lens units are mounted on ball bearing guides for maximum smoothness of movement.

Printing speeds are 10, 20, 30, and 60 feet per minute, with stop motion clutches operating up to 30 feet per minute. The camera and projector have separate clutches, controlled by a master distributor which can be set for any frame-combination printing within a 12 frame cycle. This distributor can be quickly set to make three-color separations, or to double every second frame, in order to change film speed from 16 silent to 24 sound speed. The combination of both of these operations can be done just as easily—making three-color separations at sound speed from a 16mm Kodachrome shot at silent speed. To do this, the distributor selector switches would be set to repeat the three separation frames from every other 16mm frame.

Skip-frame work can be done while running continuously at any speed, without the use of the stop motion clutches. The printer is equipped with a 16 frame selector switch which can be set to actuate either or both stop motion clutches at any predetermined frame. This is invaluable when doing special effects such as wipe-offs, and can also be used to automatically stop or start the projector on any particular frame for uninterrupted stop-frame printing during fades, laps, zooms, wipes, etc., where footage is short.

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Unseen Aces Of The Camera

HANS (Koney) KOENEKAMP, A. S. C.

By **W. G. CAMPBELL BOSCO**

IN the beginning, when motion picture theatres were Nickelodeons, when films were known as "flickers," when a "double-feature"—if such a thing were known—was nothing more than two split-reel subjects with a total running time of fifteen or twenty minutes, when ladies in the audience were asked to remove their large Gibson Girl hats, and projectors, like cameras, were cranked by hand, some of the most efficient and showmanlike cranking was being done by Hans Koenekamp.

Audiences always seemed to like the show better, and the films appeared to be more entertaining when Koney was the projectionist. And it wasn't because Koney sold them anything or overwhelmed them with his personality; he was as reticent and unassuming then as he is today. Rather, it was because

he was making his first contribution to the improvement of motion pictures by cranking his projector at varying speeds to compensate for the original errors made by the cameramen. Nothing was very standardized in those days, and one cameraman's idea of a speed of 16 frames per second was not another's.

Even the best of them seemed to err in their judgment of what was the right cranking speed, and the results on the screen were frequently not, well convincing. So, Koney set himself to correct this discrepancy; and by slowing down or speeding up on his cranking as the occasion demanded he screened better, more realistic action. And when the inevitable chase sequence hit the screen, Koney ground with gusto; to the added enjoyment of the audience.

Another of Koney's accomplishments

in those days, and one no doubt appreciated by the more sensitive and genteel members of his audience, was in reducing to a minimum that interval necessary for changing reels; an interval not infrequently accompanied by shrill whistling and the stamping of impatient feet. Koney could change reels in nine seconds flat. And by so doing set a record that, to the best of his knowledge, has never been beaten.

One day in 1913, after having been a projectionist for a couple of years or so, Koney met a man who was cutting quite a figure in the film business. His name was Mack Sennett. Sennett looked up and down Koney's lean six feet and asked, "Do you think you could run a camera?" Just like that. And because Koney is perfectly candid as well as being most saving in his speech he answered, "Yes." Just like that. And so the motion picture industry is, among some other things, indebted to Mack Sennett, who knew a good man when he saw one, for having opened the gates of a cinematic career to Hans (Koney) Koenekamp.

Sennett seemed to have startling methods of breaking a man in. Koney's first assignment had to be shot under water, in the submarine gardens off Catalina Island. And on the first takes something went wrong, or something collapsed, and the camera flooded. But Koney took it all as part of the day's work to improvise and experiment until he found a way to get those underwater scenes. And when he went back to the studio he had the sequence in the can. Sennett was quite happy about the whole thing, and promptly gave Koney a raise and a company of his own.

The strips of celluloid that he put through his camera in those days came out imprinted with the antics of personalities who were giving a new type, as well as a new concept of entertainment to an ever increasing audience all over the world, and whose names were becoming household words. Mabel Normand, Charles Chaplin, Fatty Arbuckle, Gloria Swanson, Wallace Beery, Ford Sterling, Charlie Murray, Chester Conklin, Mack Swain, along with many another, strutted their stuff, threw their pies, fought, chased and were pursued—while Koney cranked them on to fame and popularity.

One day Sennett told Koney that he had a new comedian who was about to appear in his first picture. "I want you to shoot the scene," said Sennett, "and I want you to give this new guy some tips about working in front of a camera. I think he's going to be all right." The new guy's name was Charlie Chaplin.

The personalities who trooped in front of Koney's camera interested him, of course, as they did everyone. But what interested him most was the still new, still largely unexplored science of cinematography. The possibilities he saw

(Continued on Page 30)

Proper Editing Means Better Pictures

By CLAUDE W. CADARETTE *

IF you were to write a book and submit the manuscript to a publisher, he will, if he is interested, send it to the "Rewrite Editors" for their corrections and criticisms. If the book is published, you will find many changes from your original manuscript. Words have been changed, sentences added or deleted and paragraphs shortened. This is done to strengthen your story and make for easier, clearer reading. Often, a whole sequence of the story is omitted to give the reader a continuous train of thought.

So it is with motion pictures.

A good film may consist of a simple plot and by omitting some shots and shortening some scenes, you weave the elements of the picture into closely knit sequences and then into a smooth story with perfect tempo.

To do a good job of editing, we must forget our reluctance to discard those scenes that hold a warm spot in our hearts or have a sentimental value if they do not contribute to the interest of our audiences. We should try to view our pictures with the same attitude that a stranger would have, that is, does the picture have an appeal for creating uninterrupted interest?

A poorly edited film will always receive the same reaction from an audience as a poorly written manuscript will receive from a publishing firm.

Good editing, like good exposure, is necessary in any type of film, whether it is a travelogue, scenario, or documentary. Each type of picture is telling a story and it is your job to do it smoothly, evenly, and forcefully. After all the necessary scenes have been made, they must be compiled in a logical manner so that the audience will have a continuous, uninterrupted train of thought.

The initial step in editing is to familiarize yourself with what is contained in each reel of film as it is returned from the processing station. Then cut the film into its individual scenes, and place them on a large reel in their proper positions as called for in the script. At this time, any obvious errors, such as incorrect exposures may be removed and discarded. After the film has been assembled in its proper

sequence and order, it is ready for close editing.

At this time, the film should be run on the projector and notations made of any errors in scenes that should be removed, meanwhile recording which re-take should be used. Also note the proper place to insert your titles and special effects. Never trust your memory in these matters and you will find that much time and unnecessary cutting is saved.

You are now ready to splice each scene so that the actions in them can be synchronized with the action in the following scene. Likewise, it provides a good opportunity to remove all superfluous frames which would retard the tempo of the picture.

An important function in editing film is the careful splicing of it. It is well to remember that an error of 1/1000th inch in a splice is magnified about 40,000 times on a large screen. Obviously, any slight inaccuracy in the splice will cause a considerable jump in the new scene, and may result in many torn perforations before the projector can be stopped. If you have no duplicate scene to replace it, your picture must be shelved or reworked in some manner. Splices should be so expertly made that they are not apparent as they pass through the gate of the projector.

In travelogues, as in scenarios, you should incorporate a story-telling idea or some feature to break up a monotonous series of outdoors scenes. Try to be original and use a new thought for your continuity rather than the old hackneyed ideas of shots of the car traveling along the highway or father continually fixing flat tires. Running gags can create a lot of interest in a travel film when they are new and unique.

A common fault of amateur movie makers is the overdosage of running-gags they force on the audience. I have viewed many films in which the continuity of the travelogue is greatly harmed by a constant repetition of a stunt and as a result, the film becomes rather boring. Usually a gag can be used three times at the most unless the situations in it change or are extremely amusing. One should keep in mind that your film is a travelogue and not a comedy.

The purpose of combining a light continuity or a few running gags in a

travelogue is to provide a means of transporting your audience from one location in your travels to another location. Needless to mention, this purpose should be accomplished as quickly and smoothly as possible. A few laugh reliefs are always spicy in a picture, but don't make the error of lulling the audience to sleep with your efforts.

When cutting and editing the travelogue, assemble all of the scenes which cover one location or subject into the proper sequence of title, long shots and close-ups. After doing this, you can cut each scene to its proper length and completely edit this sequence. This sequence is then ready to be connected to the following sequence by inserting your continuity.

As a rule, long shots should be rather short as they only serve the purpose of establishing the location while the medium shots and close-ups bring the details of the location to the viewers. These latter shots can vary in length according to the amount of interest they contain and the importance of the subject matter.

After the film has been completely assembled, rerun it in the projector and make notations of the scenes or actions that need to be trimmed. The more you run the picture, you will become more conscious of any lag or drag in tempo and can correct it before someone else calls it to your attention. Repeated scanning of a film will usually reveal spots in it where it can be improved and this procedure is recommended.

A scene has only one effective length and it should be off of the screen the instant that it fails to hold anyone's interest. It is less harmful to your picture to have a few scenes cut too short, than to have them remain on the screen too long.

Titles should be simple and informative. The main title can be decorative, and colorful like the cover of a book, however the subtitles should be inconspicuous and the use of them held to a minimum. Subtitles at their best always distract the attention and disrupt a person's train of thought. The style of lettering should be in keeping with the type of your picture. As an example, a Christmas film can be lettered in Old English type while it would be incorrect to use Old English lettering on a picture centered around scenes of Mexico.

Action shots should be closely spliced so that the action of a scene is synchronized with the action of the following scene. Let us assume that in a medium shot we see a man raise a gun to his shoulder to fire at a deer. In the closeup, the action should start with the actual firing of the gun to tie it in with the preceding scene. Likewise, an action in a scene of a man striking another with his fist, should be followed by a scene showing actual contact of the blow. A few frames of hesitation will spoil the effect you are after and

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* Founder, Los Angeles 8mm. Club.



Left, a Marine "Combat Cameraman" taking his meter reading. (Photo by Sgt. A. W. Rhode, Jr.)

The Camera Is A Weapon

By CAPTAIN M. S. BLANKFORT, U.S.M.C.

THE first thing to realize is that you are pioneers. You have very little precedent to go on, and less doctrine. The field of combat is your oyster. You will make your own precedents and your own doctrine. The camera is a weapon. If you use it well, it can become as deadly and as effective in destroying the enemy as a machine gun.

Combat cameramen have a tremendous contribution to make. You are a vital part of our Intelligence, not only as aerial photographers—everyone understands their contribution—but as men who land with the troops, hide in the brush, work out from fox holes, and advance with the forward echelons. As a group, you can make a permanent record of an action which no single human eye can encompass until seen put together on a film. Through what you record, our

Staffs can find their errors and the errors of the enemy and can profit by both. Officers and men who study your film are studying something permanent in that the film can be shown over and over again without those inevitable changes which occur so frequently in repeated verbal and written reports. The camera is not subjective. It wasn't frightened when it shot an enemy tank advancing. It doesn't color what it sees. The pictures it takes can be reprinted without change and shown in places thousands of miles apart. The film can be studied frame by frame, inch by inch, foot by foot. It can be enlarged until objects normally passed over shout for recognition. And, above all, the film you shoot can be used to teach replacements and save countless hours.

For all these reasons and many more, your work as cameramen is as important as anyone else's in the combat team. And for these reasons too you have been trained in the technique of *how* to take pictures. But it's a long haul between knowing how to take a picture—and *what* to take! Unless you know what to turn your lens on, all your technical training in photography may be wasted. Unfortunately, it is extremely difficult to prepare for the job of knowing what to shoot, for the one prediction that can be

made about operations against the enemy is that they are unpredictable.

In Hollywood things are different. Cameramen are planted on our side of "No man's Land" and on the "enemy's" side and are instructed by the director what to shoot. If the "action" becomes askew or the lights aren't right or a camera breaks down or the tanks are held up or the "troops" are not deploying as per schedule, the director can blow a whistle and start all over again. But a studio is not Guadalcanal or New Guinea. No one is going to "direct" the Japs to make their assaults during sunny days so that they can be photographed; nor can any one "direct" the Commander of a Task Force to make his landing to fit the needs of combat cameramen. In short, the difficulties of finding what to shoot and being in a position to shoot it are part and parcel of the difficulties of combat. There can be no doctrine as to where a combat cameraman can best be sited to photograph an action. What then? Can we let cameramen go out into the field with our haphazard best wishes?

Fortunately, there are some general principles evolved out of a common-sense approach to these problems, which can make your pioneering job a little easier, and what is more important, make your film contribution more effective.

The first of these principles is *planning*. Too often, combat cameramen are of the opinion that anything filmed in a combat area is, by definition, important. They shoot everything they see. Their only limit is the amount of film they have in their cans. These "trigger-happy" cameramen must stop shooting and start thinking. They've got to take aim before firing. Like unit commanders who plan carefully before deploying their men, combat cameramen have the responsibility of using their film efficiently to get the desired results. This means finding out what there is or will be to shoot and how best to shoot it! This means—*planning*!

As combat cameramen, you must grasp the tactics of the action of which you are a part. You must understand the reasoning behind those tactics. You must know as much as you can about the positions of our own troops; and you must find out our Intelligence estimate of the enemy's positions. In short, you have to know what moves we're going to make—or try to make—and what our guess is as to what we are up against. Once you have all the information available to you, you can begin to work out your own tactics—your camera tactics. Then you can arrive at a rough estimate of what there will be to photograph, and you will be able to weigh this against the amount of film you have on hand.

Suppose you are with a Marine Corps force preparing to make a landing to establish a beachhead on the Island of X. You should know something of the

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The article by Captain Blankfort was delivered by him as a lecture to the Marines attending the photographic school which was sponsored by the Research Council of the Academy of Motion Picture Arts and Sciences and which was directed by John Arnold, A.S.C., at the Metro-Goldwyn-Mayer Studios where Marine Combat Cameramen were trained. Captain Blankfort, in submitting this piece, stated that his main object is to start people thinking about the problems and work of these Marines making pictures under fire. It is an intensely human document, and we hope will start our readers thinking—and buying more War Bonds. The Editor.

Motion Pictures' Post-War Role

By NATHAN D. GOLDEN, Chief Motion Picture Unit
Bureau of Foreign and Domestic Commerce

POST-WAR planning is today claiming an increasing share of the attention of industry, government, and the general public. As the tide of war moves, more and more strongly, toward the eventual success of the Allied armies, the urge to study the conditions that will surround markets abroad after the war becomes steadily more compelling.

Much thought is being given to the movement of actual *physical commodities* after the war. Much study is being devoted to the conditions that will govern expanded *transport facilities* of the future, especially in the air. But is equal thought (in relation to its importance) being given to the question of a reasonably free and equitable flow of that powerful and pervasive "*intangible*," the motion picture, which works on a tremendous scale in the realm of "pleasure in leisure," of emotional reactions, and of stimulating thought-patterns? The answer, one feels strongly, should be "Yes"—but one hesitates to give that answer.

Motion pictures, in the post-war world, can operate potently as a force for democratization, for human feeling, for wholesome impulses, no less than for the salutary benefits of recreation. Through the mind and the imagination they can work cogently for good. (The Nazis, knowing the extraordinary power and effectiveness of this medium, have used the motion picture for evil ends; one will not easily forget how, in at least four capitals whose conquest the Germans contemplated, they gave a private screening of a "terror film" of Nazi war, portraying the devastation, the wholesale wreckage and awful suffering, that fell upon other peoples who had resisted Hitler's will.)

Some surveys today show that more than 100,000,000 people are passing weekly through the doors of the 17,500 American motion picture theaters. The influence of the medium, as here in our country, is indisputable—and growing. Will the post-war era witness a proportionate arena of influence—with fair opportunities and an open field—for the Hollywood pictures in the other countries throughout the world?

Struggle and Effort Loom

In the years before World War II, our foreign motion-picture markets grew rapidly. It required little if any effort on our part to control most of the screen time of the world. The reasons were obvious: we produced the best pictures (that fact was never effectively denied), and our stars were exceedingly well liked by foreign audiences. Abroad,

most domestic movie industries were poorly financed, and their films, to put it mildly, left a great deal to be desired.

But—from official reports and press stories now reaching Washington—it is plain that that picture will be altered very perceptibly after this war, and our American motion-picture industry may find itself fighting, as it never fought before, to distribute its products in foreign markets.

If the post-war contest in this field is a *fair* contest—one based upon *quality of product*—Hollywood need have no fears. If the fight should prove to be of a different character, Hollywood may conceivably find itself dependent almost wholly upon its domestic United States market to keep itself on a sound financial basis. The situation is certainly one to *induce thinking*, and to generate judicious, skillful, and determined *post-war planning*.

Power Realized. Plans Framed

Our American motion-picture industry is fully cognizant of events that might develop after this war, and has already set its sights to recapture its world markets when the guns of World War II cease firing. But we are not alone in such thoughts, nor do we have anything resembling an exclusive franchise along those lines.

Throughout the world, all countries now realize more than ever the power and influence of the motion picture. They have seen how American films have had a marked effect on the daily lives of their people, how motion pictures have aided greatly in furthering the sale of many varied American products abroad and have diverted to American manufacturers much trade that was formerly enjoyed by others.

Because of the undoubted influence of this potent medium, practically every country of any importance has its own post-war plans for the building of its own motion-picture industry, and closely associated with this is foreign governmental effort to combat the influence of American pictures on world merchandise movements.

Great Britain, the Soviet Union, Sweden, Switzerland, and Latin American countries, such as Mexico, Chile, Argentina, and Brazil, are girding themselves to give the American industry its greatest competition for post-war film sales.

British Plans

Great Britain, for some time now, has been formulating its plans to win world screen-time for its films—and this with the encouragement and assistance of the

Government's Board of Trade, as is quite naturally to be expected. In a recent speech before the British Film Producers Association, Mr. Gaitskell, of that branch of the British Government, said: "There is a feeling in many quarters that development of exports generally will be assisted by the successful export of British films. It has been said 'Trade follows the films'; I do not know how far that is an exaggeration, but there is something in it. We are paying special attention to film exports from that angle."

Mr. Gaitskell, it may be noted, stated no fact that the American motion-picture industry did not know. Our films have been silent or sound-accompanied salesmen of American goods and democratic ideals in world markets for the past 20 years without any assistance from the United States Government.

The British industry, it is generally realized, has learned much during this war on how to make good motion pictures. True, most of the British industry and its technicians have been making pictures for their *Army and Navy*, but they have been acquiring knowledge as to how good movies should be made and how to tell the story. If some of the British films made during the past year, under unfavorable conditions may be considered samples of how the British technique of film production is progressing, then the British bid fair to become our greatest competitors in the film markets of the world.

Entering the British motion-picture industry recently have been powerful interests who are determined that British pictures shall be shown throughout the world. These interests are well-financed, and their prospects of reaching the envisaged goal look brighter now than ever before in the history of Britain's motion-picture industry.

Nazis Making Broad Plans

The reverses that the Nazis have been suffering on the various military fronts apparently do not deter them in the slightest from going right ahead with broad and sweeping plans for the future in the motion-picture field. The U. S. Department of Commerce has just received the illuminating text of an article on this subject that was published only a few weeks ago by a German periodical. In the film industry, says the Nazi writer, "the war has resulted in a closer cooperation of European countries," finding its outward expression in the establishment of the so-called "International Film Chamber." That organization, the Germans allege, comprises 17 countries.

Its idea, its primary purpose, say the Germans, is to fill the yawning gap that has developed in numerous continental European countries in consequence of the discontinuance of the receipt of films from the United States. The Nazis unhesitatingly admit (since they could hardly do otherwise) that cessation of the flow of Hollywood pictures to Europe

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The Camera is a Weapon

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general plan of the action; what beaches are going to be assaulted, what opposition is expected. You should know something of the terrain of the beaches and the island and where the limit of the beachhead (Force Beachhead Line) has been designated. The time set for H-hour is very important, for it will determine to a great extent what wave you go in with. If the first wave comes before daylight, it will be too dark to shoot. The second wave or the third—or even a later wave may be better for your purposes. Remember that you can't shoot your film while you are running for cover, but if you know the general operations plan you ought to be able to move to a site, camouflage it and be in a position to take effective pictures.

Planning your film tactics will help to eliminate a situation where combat cameramen moving in with a landing force have used all their available film on the beach and had nothing left to shoot with when the troops advanced inland to the Force Beachland Line. If two or more cameramen are attached to the same assault unit, planning between them is essential to avoid duplication.

Planning your film tactics must also include the element of flexibility. In combat situations, unit commanders have reserves. In that manner, too, you must allow for a margin of reserve film. You have to be prepared to photograph anything—anytime it happens. Your camera, like your knife and carbine, must be ever on the alert. To say you have no film left is, in most cases, the poorest excuse you can offer.

To sum up: You must first get an estimate of the situation, and then plan your own camera tactics as to what to shoot and where to shoot it from, leaving a margin of safety of your available film to cover at least part of the inevitable "surprises" of combat.

These "surprises," the unpredictable turns of war, may turn out to be the most important things you photograph. Planning for them as far as you are concerned means only, as we've said, that you have reserve film. But perhaps of equal importance with the film is whether or not you are aware of "surprises." Being aware means two things: knowing the plan of operations—which we have already discussed—and, second, having a "nose for news." This "nose for news" is cliché which is almost beyond definition. Generally speaking, it can mean being alert to whatever is happening, or at the newspaper legends have it, being on the spot before it happens. It means being inquisitive and persistent—and not being satisfied with the first answer you get to a question. It is not a quality, unfortunately, which can be taught; however being aware of its existence and importance is the first step toward achieving it.

With combat cameramen, a "nose for news" has a special meaning. Your "news" can't be haphazard. It has to have a purpose behind it. *Purpose* is the second general principle to follow.

There may be months during which you are at some advanced base doing nothing because apparently nothing is happening. Your film is burning a hole in the cans. You say to yourself: "True, nothing is happening by way of action against the enemy, but there is considerable training going on. Training is action. Camp conditions are unusual. They would be good picture material. Let's make pictures."

All your reasoning is sound. Pictures should be made under those conditions. But those pictures must have meaning. Film taken of a chow line on Guadalcanal is not necessarily either meaningful or important. But that chow line broken up by an air raid alert becomes significant. When chow is complicated by alerts it becomes a problem both for the men and the mess sergeant. How that problem is faced and solved would make a picture that would help enormously in preparing the next boys who come out. Thus, when you're not in the line of actual combat, make pictures—but with a purpose. Judge every shot by whether it adds something to the understanding of whatever situation you're in.

You are not tourists; you don't make travelogues. You have a responsibility to the service for every foot of film you shoot. And whenever possible the purpose for which you shot your film should be explicit in the film itself.

The third principle is *clarity*. Wherever you take your pictures—on some Japanese-held beach or at some base in New Zealand—you must remember that what the eye sees and what the camera sees are not the same. For example: You are so sited as to give you a fine view of a line of enemy emplacements hidden skillfully in the brush and forest-fringe some distance away. You have seen some of them move. You have seen an occasional glint of an anti-tank gun. You have heard their machine guns and rifles. There's a six inch lens on your Eyemo and you say to yourself: "What a shot! Live Japanese in action on my film!" Carefully you take your picture, and sometime later your film gets back to the States for processing and release. We see it and we say: "What's that man wasting film for? All he's shown is some pretty scenery, and if there's anything behind those trees, we can't see it."

We don't see the enemy on your film because the camera didn't see him. You were tricked by what you saw and heard *before* the camera started rolling. You read into the scene what literally was not visible. To you, the enemy was there because you saw and heard him. You probably had even ducked some of his bullets. But to us who saw your film, he was so well hidden he wasn't there at all, and nothing indicated that he was firing at our troops. Therefore, in taking

your pictures, you must constantly bear in mind that your film is the final judge of the scene in front of you. You must ask yourself: What will be visible to those who run my pictures in a projection room several thousand miles away when I'm not around to explain? Will it be clear to those present why I shot this footage?

One way of helping to keep the content of your film clear is by trying to tell a story with it. To tell a story, for your purposes, means having a beginning, middle and end to any sequence you shoot. You may not be able to photograph them in correct order, but don't be afraid of using a little ingenuity. Think in terms of photographing cause and effect. That in itself tells a story. A shot of an anti-aircraft gun in action followed by a shot of a falling plane is good, although simple, story telling. Two days may have passed after you've filmed the A. A. gun before you've been able to get the falling plane. Don't let that worry you. If the two shots go together, that's all that can be expected of you, under the circumstances of combat. Develop your sense of continuity and story. Keep a record of the scenes you've shot, and after a while examine it and find out what may be missing to give purpose and clarity to your entire footage. It may be no more than a meeting of staff officers. It may be a shot of a truck convoy or a pool of landing barges. It may be all those together. But if you keep trying to add up your film to tell a clear, purposeful story, you are bound to approximate a more complete photographic record of the action.

A part of the job of story-telling comes with the right use of your camera. If you are using a motion picture camera, then use it to take *movie* pictures. For other purposes, you have your still camera. You have probably been instructed not to pan too quickly or too often. That advice is sound, at least, until you get to know your camera better. But a pan shot, at the right time and at the right speed of movement can help immeasurably to tell a story.

Planning, purpose and clarity. These are the three general principles derived out of a common sense approach to your problems. There is a fourth point which is not a principle but rather a guide to action once you have been attached to a combat unit.

You will need considerable help to get the information on which you will base your planning. This information will not always be accessible for various reasons. It is up to you, therefore, to make it accessible. The Two Section (Intelligence) and the Three Section (Plans and Training) can be counted on to have the material you need. In these Sections you will find officers who understand your problems and will help. If, as sometimes happens, an officer doesn't fully comprehend the importance and the necessity of your job keep hammering away at him until he gives you what you need.

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EASTMAN FILMS

Motion Pictures' Post-war Aims

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has left a tremendous cavity in the screen entertainment of the Reich-dominated countries. But they have their own plans, which they present with typical assurance.

An annual production of 400 to 500 films (the Germans estimate) is required for the 27,000 motion-picture theaters of the European Continent, with their 11,000,000 seats. Can such a demand be satisfied, despite the terrific and steadily tightening exigencies of the war? The Nazis sound confident. "This production," asserts the *Deutsche Zeitung* in Ostland, "will be attained in spite of all difficulties." "The planned German quota of 110 films *will in any case be achieved*," boldly claims the Nazi writer.

"This year's Italian production will not be much less," the Nazi analyst figures. The recent violent explosions, disruptions, and incursions in the Italian "theater"—the theater of grimly real action—make one exceedingly dubious as to whether the Nazis will ever witness the realization of those fond hopes.

France, Spain, Other Countries

Among the film producers on the Continent other than the Reich and Italy, says the German writer whom we are quoting, France is growing in importance, after the shattering economic disturbances to which its once leading film industry was subjected in peacetime and after its collapse soon after the beginning of World War II. Considering the "collaboration" with the German and Italian film industries, it may be expected, the Germans calculate, that France will produce about 60 long films this year.

Among the "southeastern countries," Hungary has developed during the past decade a motion-picture industry of its own, which, in the German view, has attained a good reputation in foreign markets and has even been improved in efficiency during the course of the war. Of the two large film studios in the Hungarian capital, Budapest, one is at present "largely at the disposal of the German film industry." Just the same, it is expected that Hungary will produce about 50 real Hungarian films during this twelve month.

Spain is endeavoring to reach that same figure (50), though development has been rather seriously retarded by the consequences of the civil war and by the element of mounting costs. The Spanish film industry, it is noted, is encouraged as much as possible by the Franco Government, "which is particularly interested in export to the Ibero-American countries," including such increasingly significant markets as Argentina, Chile, Peru, Venezuela, Colombia, and Mexico. Competition on the part of

Spain is probably going to play a role by no means negligible in the post-war years.

Slightly lower than that of Spain is the production that may be expected in the Scandinavian countries, which have always had a large number of motion-picture houses and lively activity in this field, but which have (it is noted) paid relatively little attention to their own production for a long time "on account of the predominating influence of films from the United States." Sweden, it is stated, will produce about 25 films in 1943, and Denmark and Finland about 15 films each. Switzerland, one of the few lone neutrals in Europe, is being counted on to turn out at least 10 films.

Reich "Counts Chickens"

The Nazis, not unnaturally, view the diminution in the supply of American films in the countries of "Fortress Europe" and its environs with a considerable degree of complacency so far as the immediate and ultimate possibilities for Axis-dominated Europe are concerned. They are setting themselves to shape post-war movements in this highly important specialized realm of trade, entertainment, and thought. They are already maneuvering to grasp every conceivable opportunity to see that motion-picture matters develop in a manner to augment their bank-accounts. The Nazis are clearly and resolutely envisaging post-war potentialities and are manifesting every intention of driving toward their movie objectives with typical Teutonic doggedness.

We in America well know that the coming total defeat and collapse of Axis power will leave scant scope for any world-embracing—or even Europe-embracing—scheme of domination by the German and German-dominated motion-picture interests. But the over-all picture that we clearly discern in such a report as has been cited above *may*, to our own advantage, indicate the necessity for long-range thought and truly forward-looking action on the part of the Hollywood industry—thought and action that take cognizance of the multifarious changes which this war has wrought and is now inducing, in what may be described as the motion-picture patterns of many foreign lands.

Changes are Constant, Varied

Those changes may be discerned not so much in any drastic overturns or reversals of previously existing situations as in manifold rather-small modifications and departures. Such modifications are of every imaginable kind. It may be worth while, for a few moments, to turn the spotlight hither and yon, on the foreign motion-picture "stage," and note just a few of the odd and assorted new developments under the impact of the war. Each of them *may* mean something in the future.

In Australia a new law requires that all theaters stay closed on Sundays. In that Commonwealth, too, we find a new

movement to establish a circuit to show Russian films exclusively.

In Brazil, all Axis films imported in 1942 or in the possession of distributors were later confiscated by the Government.

In Haiti we see the motion-picture theaters reducing the number of performances given daily, because of a shortage of electricity. In Afghanistan we find a ban clapped down on "any political news reels" (pretty broad term). And we learn of untutored natives in the wilds of Burma's jungles reduced to a state of mingled ecstasy and panic by the sight of their first movie.

Turkish citizens, we ascertain, are forbidden to attend even private screenings of any propaganda films.

A Swedish producing company has displayed the energy and summoned the specialized skill necessary to embark on the production of a full-length cartoon in the Disney manner.

The people in Algeria are making it plain that, in their motion-picture fare, they emphatically reject "psychological problems."

Britain establishes a new and vigorous association to promote the production and use of scientific films.

Staid trade experts at the Department of Commerce in Washington find themselves, upon occasion, irresistibly engrossed by consular descriptions of the behavior of native audiences of the less-developed countries as those spectators view (rarely, or possibly for the first time in their lives) a lifelike picture on a screen—their unrestrained shouts of excitement and roars of delight, their slappings and cavortings, and other fascinating evidences of "audience participation." Their enjoyment plainly points to enlargement of markets in the future.

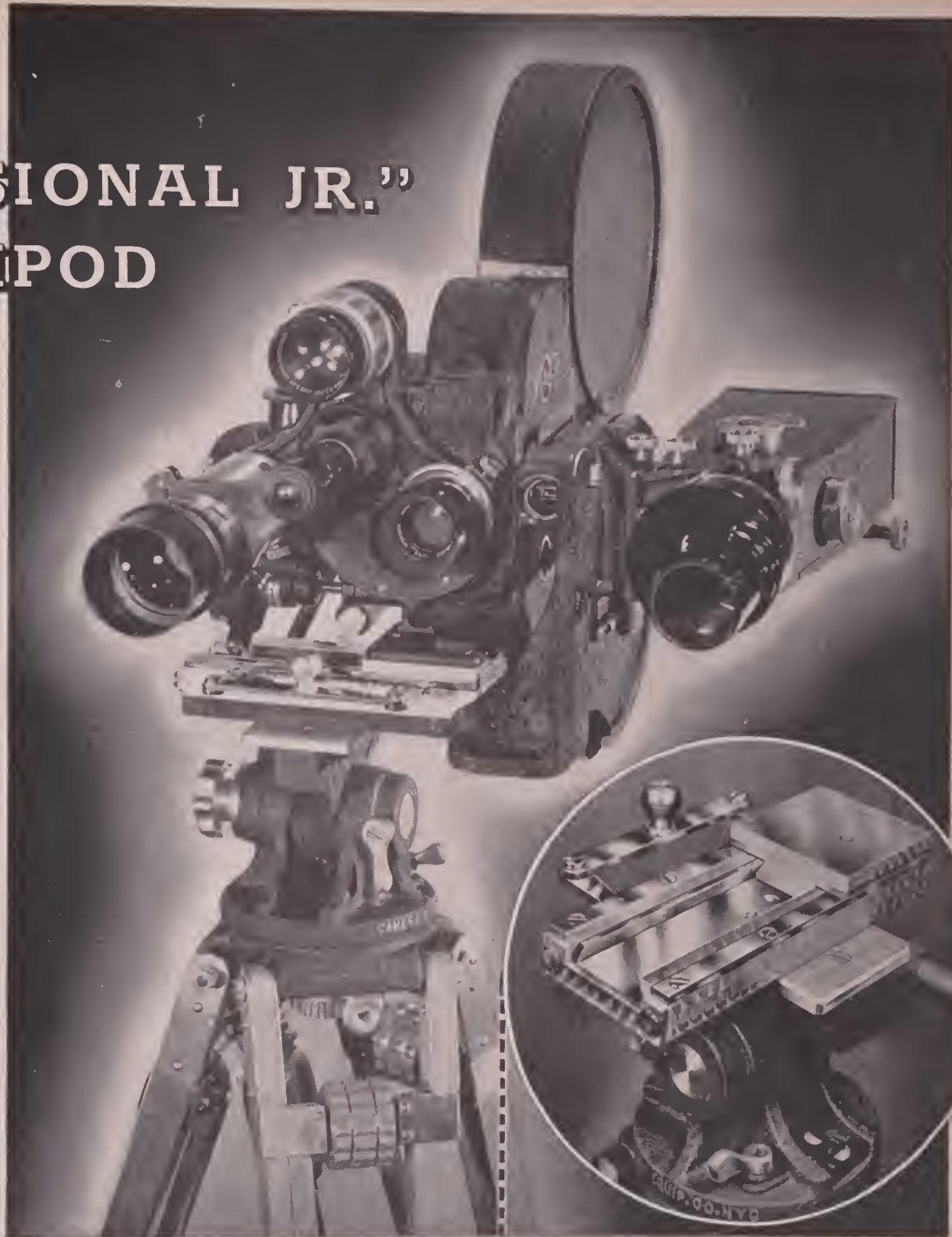
The items just cited have not the faintest semblance of organic unity or inter-relationship—but they all drive home one fact: namely, that things are moving swiftly in the motion-picture field abroad, that new forces are being unleashed, and that Hollywood will need, more than ever, to *know*, to *study*, and to *plan*.

Films Follow Armed Forces

One of the really potent factors now shaping the preliminary stages of the world film situation that will develop as the war ends is the presence of contingents of the armed forces of the United States in nearly every corner of the world. And American movies inevitably follow the flag. Consequently, to an unprecedented degree in many cases, Hollywood's entertainment films are being projected on screens in countless remote, exotic and previously little-known regions—in steaming, tangled South Sea islands, in the frigid Arctic, in arid Africa, in Sicily, and in India and Ceylon as our forces prepare to start "on the road to Mandalay."

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THE NEW "PROFESSIONAL JR." * TRIPOD WITH REMOVABLE HEAD



The B & H Eyemo camera shown here mounted on the "Professional Jr." Tripod and Shiftover has been especially adapted for aerial use by the Office of Strategic Services, Field Photographic Branch, Wash., D. C.

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★ The friction type head gives super-smooth pan and tilt action,—360° pan and 80° tilt. A generous sized pin and trunnion assures long, dependable service. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. A "T" level is built into this 14 lb. superfine tripod. The top-plate can be set for 16mm. E.K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

Tripod Head Unconditionally Guaranteed 5 Years

"Professional Jr." Tripods and Cameraquip Shiftover Alignment Gauges are used by the U. S. Navy, U. S. Army Air Bases, Signal Corps, the Office of Strategic Services and other Gov't Agencies—also by many leading Newsreel companies and 16mm and 35mm motion picture producers—for important work.

SHIFTOVER ALIGNMENT GAUGE

★ This Shiftover device is the finest, lightest and most efficient available for the Eyemo Spider Turret prismatic focusing-type camera.

★ The male of the Shiftover attaches to the camera base permanently and permits using the regular camera holding handle if desired. The male dovetail mates with the female dovetail base and permits the camera to slide from focusing to photographing positions for parallax adjustment. The camera can be locked in desired position by a positive locking device.

★ The Shiftover has a "snap-bracket" which prevents the camera from sliding off the dovetail base—and is provided with dowel pins which position it to tap-plates of tripods having $\frac{3}{8}$ or $\frac{1}{4}$ -20 camera fastening screw.

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY

Post-War Lighting Outlook

THE following highlights of "lamp-dom after the war" are taken from a talk delivered recently by Ward Harrison, director of G. E. lamp department's Engineering Division, to a group of lamp sales executives at Nela Park, Cleveland.

A real market for fluorescent lighting after the war will be the nearly two million stores in the U.S.A. These stores, according to all utility executives contacted by Mr. Harrison, are chiefly interested in F-lighting. Incandescents, however, will still have considerable use for spot-lighting.

Chain stores alone, one survey shows, will spend a half billion dollars in the first year after the war for store modernization. That divides itself into \$3,500 per store. "And good lighting," Mr. Harrison points out, "has always stood high up on the list of things a store should have."

He pointed to three objectives in the G.E. 3A store-lighting plan: lighting for attraction, appraisal, and for atmosphere. Of interest to architects and manufacturers of store-front materials is the all-glass "visual store-front" which reveals the whole store from the street. To accomplish this, the "visual storefront" store will require a relatively great amount of light. Among other markets for greater amounts of fluorescent lighting will be the theater and the gas service station.

Industrial Market

Only one-third of American industry as a whole is well lighted today. That leaves two-thirds of the industrial market (both large and small plants) yet to be lighted in accordance with present lighting practice.

Sealed Beam Lamps

Many types of hermetically sealed lamps are being used on military vehicles, as landing lamps for war planes, for signaling on the ground, in the air, and at sea. An exceedingly powerful lamp is being developed for searchlighting and other military applications too secret to be revealed here. With slight modifications, sealed-beam lamps should find good post-war applications in the farm and railroad lighting fields. New opportunities for improved lighting for outdoor sports and for better drying methods through infrared radiation are indicated as the result of other lamp types developed for war needs.

Projection Lamps

"The peacetime demand for projection lamps should expand at a greatly accelerated rate," Mr. Harrison believes. The value of movies, as an educational medium used so extensively by the armed forces, has been definitely proved. "We shall also doubtless see a wide peacetime application of the V-Mail idea for photographing and projecting of microfilm records," he declared. Application of

this war-born technique, Mr. Harrison believes, would not only make for much more effective and compact business filing but would facilitate a wider dissemination of educational material.

Better Photo Lamps

Duration developments in the photo-flash field has led to material increases in peak lumens of five G. E. Mazda Photoflash lamps. War needs have also brought about the perfection of an uncanny photo device permitting flashes of enormously high candlepower, each flash lasting for only a few millionths of a second. Obviously, the peacetime applications of this super lighting "machine gun," equipped with a mercury vapor light source, holds great potentialities for the commercial, portrail and news photo fields.

Germicidal Lamps

One day, the public will hear specifically of the role being played by germicidal lamps in barracks, hospitals, submarines and elsewhere in the war effort. "This lamp, I believe," Mr. Harrison said, "will have a big future." Its importance in school rooms of the country probably will be second only to the use of germicidal lamps in the nation's hospitals. He sees a germicidal fixture and lamp business equivalent to at least one-fifth that of the relighting all of the country's schools.

Just as the use of germicidal lamps have been used by sugar refineries to sterilize a special sugar for canning—and at one-tenth the former cost—and by meat packers to improve sanitary conditions of meat storage places, so will these germicidal lamps more than likely find countless practical uses in other branches of the foods industry.

F-lighting in Homes

Mr. Harrison further believes that millions of men and women war workers, aware of the advantages of 25 to 50 footcandles levels from the fluorescent systems in their war plants, will not continue to be satisfied with the relatively low levels of lighting in their homes. It is not beyond the bounds of reason to presume that five to ten million fluorescent lamps alone for kitchen fixtures will be sold in the first year after the war ends.

Street Lighting

More safety and lighting conscious than ever before, many municipalities have already made detailed plans and are setting aside funds for post-war improved street lighting, Mr. Harrison reveals. Development of better street and highway lighting units is underway. It is not too early, Mr. Harrison feels, for utilities to be urging proper authorities to map plans for post war street lighting programs and to take an active part in these activities at the earliest moment.

The Forgotten Cameraman

DURING the past few weeks this writer has read with considerable interest the rave reviews that various newspaper critics have written about a number of very excellent motion pictures that have been released late in the year with the hope that they might win the coveted Academy Award.

One thing struck me squarely between the eyes in practically all of the reviews. It was the fact that directors, writers, producers, actors and actresses were given credit for the greatness of the pictures. Somehow or other the reviewers didn't seem to realize that it was the cameraman in each case who photographically placed upon the screen the various "moods" they were raving about.

"Madame Curie" is a great picture, but one of the most important elements that makes it so is the mood that Cinematographer Joe Ruttenberg managed to capture with his camera. Had he missed fire with his photography the picture would have lacked its present greatness. The same goes for all the great pictures of the past year.

I, personally, feel that it is high time the cameramen were given some recognition by the critics, many of whom claim to have uncanny knowledge about what makes a picture great or bad. Cameramen throughout the years have concentrated on their art, and have failed to hire press agents to publicize them and make the picture-going public conscious of them. Perhaps, it is their own fault that critics overlook them. If so, it might be a good idea for them to get a personal publicity agent to tell the world about the great part they play in the making of successful motion pictures. In the meanwhile, let us hope that the critics somehow will realize that while a director may decide on a mood and tell it to his cameraman, it is the cameraman who has to understand what the director wants and puts it on the screen. HAL HALL.

OWI Does Three Reels

"Pipe Line," "Yellow Springs" and "The Town" have been completed by the OWI Overseas Motion Picture Bureau. With other documentaries, now in work, to round out the program, they will be ready for an invitational Hollywood screening early next month.

Magazine Picks 'Curie'

Scholastic Magazine has selected "Madame Curie" as best film for young people in the January, 1944, issue.



WORLD'S FIRST PORTABLE PROJECTOR—BUILT BY H. A. DeVRY IN 1912.

His **IDEA** Took Motion Pictures to the **CROSSROADS** and **CLASSROOMS** of the World

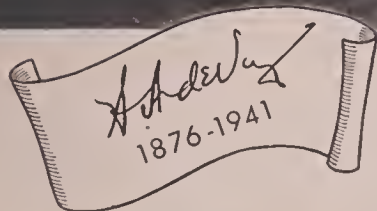


THE modern miracle of Visual Education—given full leash by the speed-up demands of War—had its beginnings in 1912 in a "suitcase projector" that was destined to take motion pictures out of the theater into the meeting places and classrooms of the world.

For three decades Dr. Herman A. DeVry—the man who conceived the IDEA of PROJECTOR PORTABILITY—made a succession of engineering contributions to the progress of Visual Education that won him a place with Thomas A. Edison and George Eastman on the Honor Roll of the Society of Motion Picture Engineers.

Today's mass production and fighter film-training programs were presaged by his 1914 pioneering of a school library of 86 motion pictures on major subjects of the school curriculum—complete with teacher study guides. In 1925 he established the *DeVry School of Visual Education*, which developed into the National Conference on Visual Education—the largest organized force in the visual field dedicated to the furthering and perfecting of "learn-by-seeing" techniques. Also in 1925 he founded *DeForest's Training, Inc.*, to teach Electronics with the aid of motion pictures.

Dr. DeVry would have been 67 years of age on November 26th. For the company that bears his name, 1943 is the 30th anniversary of its founding. Over its plants flies the coveted Army-Navy "E" with Star—designating continued excellence in the production of motion picture sound equipment—another "first" for DEVRY—another tribute to the vision, determination and integrity of its founder—whose inherent modesty would disclaim the oft' heard tribute, "*Father of Visual Education.*"



DEVRY

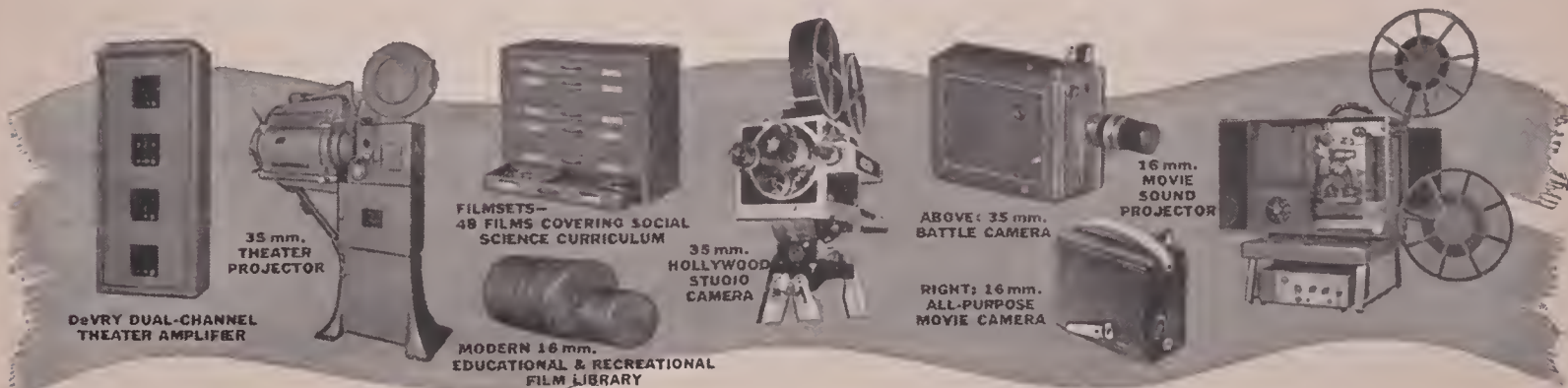
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HOLLYWOOD



WORLD'S MOST COMPLETE LINE OF MOTION PICTURE SOUND EQUIPMENT

Motion Pictures' Post-war Aims

(Continued from Page 18)

What does this mean in terms of potential post-war markets, post-war trade arrangements, post-war planning? These movies that are "breaking new ground" as they accompany or follow the armed forces are arousing wholly new desires for entertainment among resident populations—they are stimulating interest, creating demand; they are opening the door to future opportunities for even broader geographical distribution of the Hollywood studios' products than we have witnessed in the past.

We have just used the word "geographical"—and that serves to bring home the reminder that different geographical areas have different political set-ups and governmental jurisdictions. They have, and *will* have, different trade-control measures, tariffs, fees—and possibly restrictions of a nature that are somewhat hampering. Which brings us to a feature of "motion pictures, post-war," that can be discussed only with a marked degree of circumspection.

Competition on Merit

The American motion-picture industry has always welcomed fair competition in any market of the world, and it seems quite reasonable to assume that this is the policy to which it will consistently adhere in the post-war period.

The United States is the greatest dollar market in the world for good motion pictures. Motion pictures of real excellence, whether they were produced in Britain, France, Germany, or any other country, have in the past found ample and generous opportunity to compete in the United States market with the films from our own studios.

Are reciprocal conditions to prevail abroad in the post-war period? It seems scarcely necessary to emphasize the troublesome character and general undesirability of foreign artificial barriers such as quota and contingent systems that gravely impair the opportunities of our American films to compete freely abroad. It goes without saying that, in the post-war years, our motion-picture industry strongly hopes to see the elimination of any regulations abroad providing that—as a condition precedent to doing business in a given market—our American companies must either acquire a number of the domestic films of the country in question or must cause the production, with American capital, of a given number of films there. One feels justified in saying that it seems difficult to discern the equity of such hobbling requirements — under which the Hollywood films must struggle over difficult hurdles before they can reach the foreign screens and satisfy the eager entertainment hunger of the foreign audiences.

A thoroughly impartial observer on the sidelines might well ask: Is it not

true that *quality of product* is the only genuine basis and criterion of fair competition? The foreign patron at the box office, in the post-war period, will be the real and competent judge of quality films and of the types of pictures that he prefers.

If pictures produced in the United States happen to be bad, audiences in this country will not patronize them merely because they are of American make. The same holds true in other world markets. Administrative walls and restraints cannot make unsatisfactory motion pictures seem good to those who view them. Shackles imposed from above, like artificial stimuli for an effort inherently weak, simply serve to distort the normal pattern of things and to impede or frustrate the natural movements, international commerce, or motion pictures as a vehicle of entertainment, emotion, vision.

It may assuredly be said that the United States motion-picture industry feels, unanimously, that the *quality standard* is the only type of barrier to which our American films should be subjected, in order to do business in world markets.

For Fair Opportunity

Will the free flow, between nations, of this powerful "intangible," the motion picture, be given consideration in the conditions that will surround the framing of the peace? The American industry hopes so.

It seems virtually certain that the agenda of the peace-making will embrace the endeavor to assure fair conditions and circumstances in other activities such as mining, agriculture, oil, steel, air transport, and various other economic aspects of the modern world. Many students of the situation believe that comparable attention and efforts may well be devoted to the motion picture, which may fairly be said to have proved itself a necessary instrumentality in the successful prosecution of the war, and which promises to be equally significant in the coming era of peace.

The morale-value of our pictures is being attested, at this moment, by careful observers abroad. As quickly as Axis-occupied territories are liberated, American motion pictures are sent in for showing to the people who have been freed from the Nazi-Fascist tyranny. People who had "starved" for years for really entertaining American films, who had been forced to look solely at Nazi propaganda pictures, are today crowding the theaters of North Africa and Sicily as never before.

The motion-picture industry has often been referred to as one of the ten leading American industries. Its contribution to the war effort has certainly been notable. It has its share of gold stars on its service flags. Its personnel and facilities have been made available to the Government without profit, and its stars have brought relaxation and high-spirited pleasure to our fighting

men in the training camps in the United States and at the front-line posts in all theaters of war. One well-known columnist-commentator made this statement, just the other day: "Diversion and recreation are vacuum-cleaners for the mind: the movies, according to first-hand accounts, are *making better fighting men* in the South Seas."

Value Amply Attested

A recent number of the Department of State Bulletin cites numerous striking examples of the enthusiasm with which American films (the writer is speaking especially of non-theatrical pictures, but his observations apply, one feels, to American movies in general) are received today by civilians in remote foreign regions. We are told how, in one country to the south of us, the projector used by the United States Embassy in the capital city during the day was loaded onto a truck and carried outside the city to the coffee plantations for showings in the early evening to the coffee pickers, many of whom had never seen a motion picture. The films were received *rousingly* by the laborers.

At the other extreme are the seminaries and schools of the churches, sometimes located in isolated spots, whose students are thirsting for knowledge of the outside world. According to one field report, two priests from a seminary appeared at the American Embassy in a leading South American capital one afternoon to request a showing at the school. They wistfully inquired whether a 3-hour exhibition would be asking too much—since the students ordinarily see films *only once a year*.

Enthusiastic motion-picture audiences abroad (the State Department writer notes) have become a routine, but never uninteresting nor unimportant, story. Photographs of the audiences show the intense eagerness with which the people attend the exhibitions. In one case, "three benches at the rear broke under the weight of the persons standing on them before the show was over." More than 500 eager townspeople had jammed into a tiny hall.

"The motion picture," says the State Department in its general comment, "is a recognized instrument of communication capable of presenting clearly to millions, literate or not, the best-selling novel of the year, the latest victory on the battle-fronts, or, by means of animation, it can describe in detail the internal operation of an engine." Motion pictures, the department stresses, "are serving a long-range need in identifying the true spirit of the United States through pictures showing our people's daily lives, their work, their institutions, and their land."

Task for Post-War Planning

The endeavor to assure that foreign markets in the post-war period shall be reasonably free of access for our films

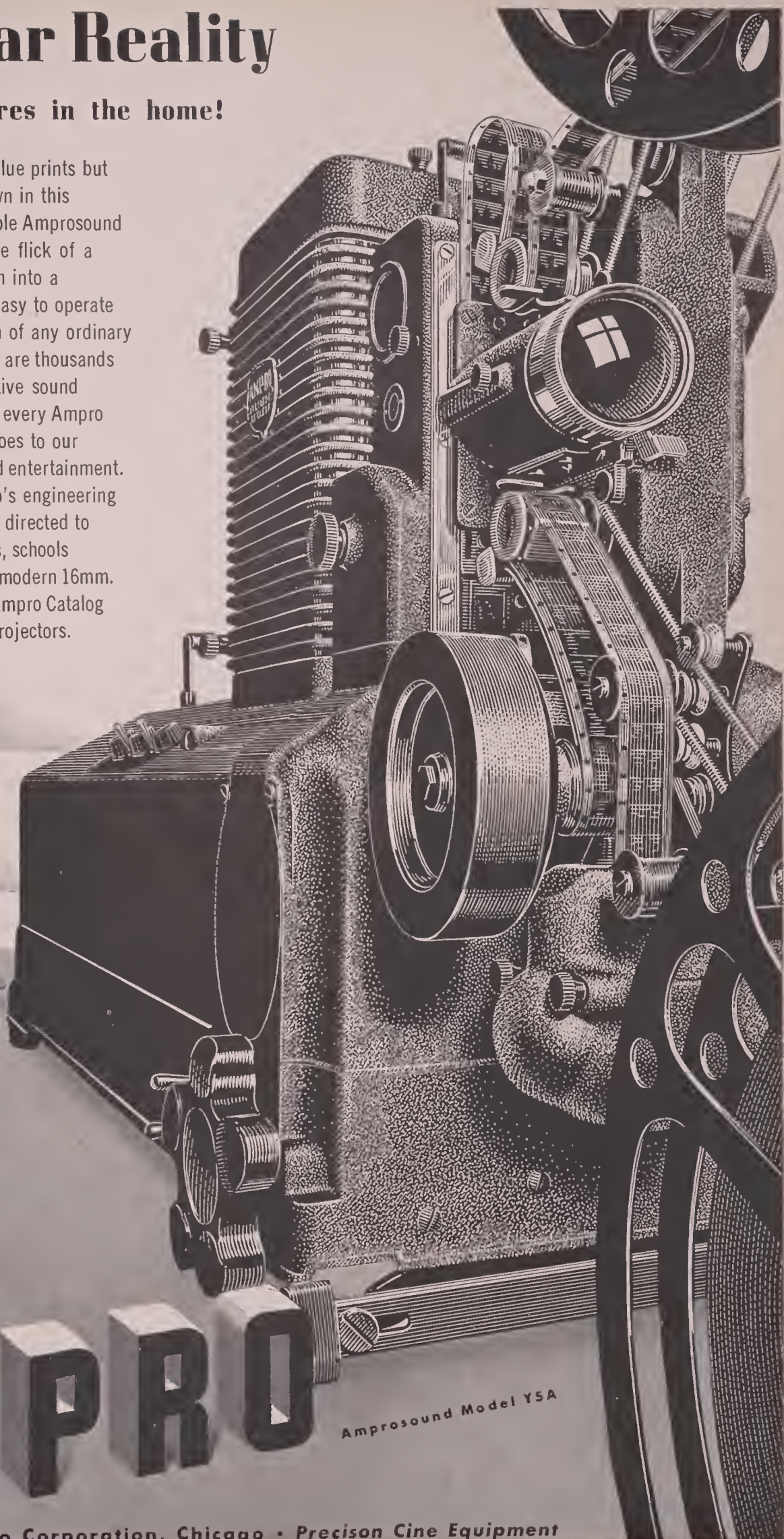
(Continued on Page 31)

A Post-War Reality

talking motion pictures in the home!

They are here now—not in blue prints but in actual production as shown in this illustration—compact, portable Amprosound 16mm. projectors that at the flick of a switch turn your living room into a motion picture theatre. As easy to operate as a radio. Within the reach of any ordinary family budget. Available too, are thousands of entertaining and instructive sound and silent films ★ Of course, every Ampro projector we make TODAY goes to our armed forces for training and entertainment. But TOMORROW all of Ampro's engineering skill and experience will be directed to bringing to American homes, schools and industry the miracle of modern 16mm. sound projection. Write for Ampro Catalog of 8 and 16mm. precision projectors.

★ *Buy War Bonds*



AMPRO

Amprosound Model YSA

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AMONG THE MOVIE CLUBS

High Speed at MMPC

Highlight of the December meeting of the Metropolitan Motion Picture Club, New York City, was a talk on ultra high speed cameras by H. J. Smith, of the technical staff of the Bell Telephone Laboratories. Mr. Smith exhibited a 16mm. film demonstrating ultra slow motion photography.

An interesting film shown at the meeting was a 1000-foot Kodachrome picture of the New York World's Fair, made by Ray Moss with a Bell & Howell magazine camera, hand-held, and employing a one-inch lens.

Frisco Club Elects

At the annual dinner meeting of the Cinema Club of San Francisco on December 21 the following officers were elected: President, L. M. Perrin; Vice-President, C. D. Hudson; Secretary, Miss A. Meinert; Treasurer, Jesse Richardson.

Following the election and installation of officers two films were shown: "Weed 'Em and Weep" by Dr. J. Ally Thatcher, and "Western Lakes and Streams" by Jesse Richardson.

Philadelphia Cinema Club

Members of the Philadelphia Cinema Club were given the low-down on how to make animated cartoons at the club's December meeting. William Bird of the Philip Ragan Associates, producers of cartoons, was the guest, and he gave the members practical illustrations of the cartoon work, with sound films to illustrate his talk.

The New York Eight

Members of the New York City Eight Millimeter Motion Picture Club were given a few glimpses of sunny California at their December meeting. Fred Evans of Hollywood, Calif., loaned them his Kodachrome subject, "Glimpses of Southern California." They also looked at "Fledglings," by Dudley Porter, of Beverly Hills, Calif. Also, from Porter, they saw a make-up test of Linda Darnell. Altogether, quite a California party in New York.

Southern Cinema Club

An old-fashioned "Box Social" featured the Christmas party of the Southern Cinema Club on December 22. The ladies brought box lunches which were auctioned off. The purchasers ate with the ladies who brought the lunches. The proceeds went into the club treasury. And Jack Helstowski shot 200 feet of 8mm. film of the party, which will be shown at the annual banquet this month.

Brooklyn Club

The Brooklyn Amateur Cine Club held two meetings in December; one on December 1, the other on December 15. Four films featured the first meeting. They were "Frail Children of the Sun" by John Larson, "Summertime" by Charles Benjamin, "Mr. Bug Plays Cupid" by Martin Sternberg and "Autumn" by Dr. A. Gortz—all prize winning pictures of 1942.

B. Erle Buckley, A.R.P.S., noted pictorialist, was guest speaker at the second meeting, talking on composition, angle shots, filtering and the importance of basic fundamental technique.

Syracuse Movie Makers

An excellent idea was carried out at the December meeting of the Syracuse Movie Makers. Members brought their old Christmas films to show each other with the idea of finding out what not to shoot in their Christmas films. Might be a good idea for all clubs to hold such meetings before each big holiday. Probably would save a lot of precious film during wartime.

Minneapolis Christmas Party

Reports from the Minneapolis Cine Club indicate that its annual Christmas party was one of the most successful meetings in the nine year history of the organization. A total of fourteen pictures were exhibited, which should have given the members something to talk about.

A Night of Travel

Four unusual travel films featured the December meeting of the Saint Louis Amateur Motion Picture Club. "Take a Trip to Washington," "Here, There and Everywhere," "Williamsburg, Virginia" and "Brook Forest, Colorado" were the travels, and for a windup an interesting film of the St. Louis Zoo was shown.

Utah Club

The spirit of Christmas prevailed at the December meeting of the Utah Cine Arts Club, Salt Lake City. On the program were "Christmas at Becky Schettler's," a 16mm. Kodachrome by Becky Schettler, and "Merry Christmas," an 8mm. Castle film. Also on the program was "The Amateur," an 8mm. Kodachrome by Mr. and Mrs. Al Morton.

Following the showing was an open forum, with members showing unedited films for suggestions by those present. This is getting to be quite a feature with the club.

EVERY person in the United States who has a loved one in the armed service knows that the one thing that means most to him is word from home; letters, photographs, newspapers, anything that will keep him informed of what is happening. I saw a letter from a boy to his mother in which he said: "Mom, please send me all the letters you can, and pictures. Mom, if you sent me a picture of a house fly and told me that it was on a wall of our home I would love it."

When a soldier boy is homesick to see even a fly you can figure he wants to see many other things. And that is where our many amateur cinema clubs can do something worthwhile if they will get to work. Here is the idea.

Instead of each member of the club photographing odds and ends and bringing them to the meetings to show his friends, why not get together and do a cooperative job and create a film to show the boys overseas just what is going on in your home town! Those boys want to know if the vegetables in the market look the same, if the kids still play ball in the vacant lot, etc., etc.

If the members of each amateur club would get together and work out a program for a film to send to the boys overseas they could do a grand job. One member would be delegated to photograph one sequence, another another and so on. Then a small committee could be appointed to edit the combined sequences and the result would be a picture of life in your home town. Then communicate with the War Department and tell them you have such a film you want sent to the boys overseas.

Imagine the thrill it would give a boy from your own town if he should suddenly see his mother hanging out the family wash, or his dad clearing the snow away from the sidewalk in front of HIS house! If every club in America made such a film, hundreds of thousands of boys would see how the folks in their own home towns are carrying on. It would mean more than a dozen letters. It's just an idea, but why not think it over—and then act.

HAL HALL.

Blind 'See' 'Desert Song'

An unusual experiment intended for national adoption by veterans hospitals was conducted at the Brooklyn Academy of Music recently under the auspices of the Industrial Home for the Blind with Showing of Warners' "Desert Song," using Tom Slater of Mutual network as seeing eye commentator.

TWO ALL-TIME HIGHS

WITH millions of feet required by our Armed Forces for training and other military purposes, the total production of Eastman motion picture films has pushed into new high ground. And the all-around quality of this huge output has never been excelled. Eastman Kodak Company, Rochester, N. Y.

J. E. BRULATOUR, INC., *Distributors*

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EASTMAN FILMS

New Filmosound Releases

"Journey to Jerusalem," 16mm. sound, 9 reels. Rental \$25. A screen production of the play as produced at the National Theatre in New York City by the Playwrights Company. An inspiring and highly dramatic story of the young Jesus by the eminent American dramatist and Pulitzer Prize winner, Maxwell Anderson. A passage from Luke which tells of a Passover pilgrimage to Jerusalem by the Boy and His family, is the basis of this unique transfer of a Broadway play, in its entirety directly into "theatre-on-film." (Arlene Francis, Sidney Lumet, Horace Braham)

"Lady in a Jam" (Universal), 16mm. sound, 10 reels. Rental \$17.50. A gay comedy in which Irene Dunne portrays an irresponsible New York heiress who loses her fortune and then goes West to the badlands of Arizona to work an abandoned gold mine in a ghost town. Others involved are a cowboy and a psychiatrist trying to straighten out the kinks in the lovely lady's mind. (Irene Dunne, Patric Knowles, Ralph Bellamy) Available for approved non-theatrical audiences after December 19, 1943.

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Films Rated Services' No.1 Entertainment

FILMS rate as the number one entertainment for the armed services all over the world, so said OWI in a report on the lonely outposts of the army and navy and the entertainment provided for men in them.

The outposts are on islands in tropical jungles and aboard ships, it is explained, and the army and navy bring film shows to the men backed up by radio entertainment and phonograph music. They get movies in considerable quantity and variety, says the report, including the new smash hits that reach many isolated spots before they are released in continental U. S.

Officers of the special services division of the army and the welfare and recreation division of the navy agree that motion pictures are by far the most popular form of entertainment in all the uniformed services so the army and the navy are operating the largest motion picture circuits in the world.

The navy alone leases about 300 new titles a year. The number leased by the army is not announced but it has facilities in various parts of the world

for making necessary additional prints. Outposts too small or too remote from the beaten path to get at least two or three new films a week are very rare indeed.

How the army movie circuits operate throughout the world is illustrated by one in the South Pacific. Prints of all films obtained by the army (made available without cost by the film industry) are flown from San Francisco to Australia and to New Caledonia. From there they are distributed to the south and southwest Pacific outposts, usually by plane. It is not unusual for an outpost on some island the very name of which was unknown to its present inhabitants before the war to show two or three new films each week.

Each week prints of three different films are flown to Alaska from the west coast in sufficient numbers for all outposts throughout the interior of Alaska and the Aleutians to get their quota of motion picture entertainment.

The greatest problem for both the army and the navy is not films but projectors. Small outposts are so numerous that it is sometimes difficult to obtain enough projectors to go around, even 16mm. projectors, which are mostly used for small groups.

On board ship it was the navy's peacetime custom to show movies topside. Blackouts prevent this now. However, showing movies to large groups inside is impractical. The navy has solved the difficulty so far as the limited supply of projectors will permit putting on progressive shows on the larger ships. The men are assembled in small groups in various parts of the ship and as soon as a reel is finished in one part it is rushed to another part for a repeat run. No attempt is made to supply movies to the small ships, but the men on most small ships usually get ashore more often and are able to go to the movies wherever they happen to be.

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**BUY MORE WAR
BONDS and HELP
WIN IN 1944**

~ ~ ~ ~ ~

The Academy Still Show

(Continued from Page 9)

Second Prize—Clarence S. Bull of Capt. Clark Gable, M-G-M.

B. Female

First Prize—Frank Tanner of Linda Darnell in "It Happened Tomorrow," Arnold Prod., U. A.

Second Prize—Frank Tanner of Kathryn Grayson, M-G-M.

C. Two Persons

First Prize—Gene Kornman of John Sutton and Joan Fontaine from, "Jane Eyre," 20th Century-Fox.

Second Prize—Alexander Kahle of Gregory Peck and Taumanova in, "Days of Glory," RKO.

(2) BEST CHARACTER STUDY

First Prize—Frank Tanner of Patricia Prest in "Song of Russia," M-G-M.

Second Prize—Henry Waxman of Sidney Greenstreet, Warner Bros.

(3) BEST POSED PRODUCTION STILL

A. In a Studio

First Prize—Hal McAlpin, of Walter Huston, Walter Brennan, Esther Dale, in "North Star," Goldwyn Prod.

Second Prize—Jack Woods of Gary Cooper and Ingrid Bergman in, "Saratoga Trunk," Warner Bros.

B. Out-of-Doors

First Prize—Hal McAlpin from "North Star," Goldwyn Prod.

Second Prize—Stax Graves of Ann Revere, Jennifer Jones, Blanche Yurka, in "Song of Bernadette," 20th Century-Fox.

(4) BEST ACTION PRODUCTION STILL

A. In a Studio

First Prize—Alexander Kahle from "Behind The Rising Sun," RKO.

Second Prize—Floyd McCarty of Joan Leslie in "Rhapsody in Blue," Warner Bros.

B. Out-of-Doors

First Prize—J. C. Milligan from "Wintertime," 20th Century-Fox.

Second Prize—Frank Bjerring from "Cross of Lorraine," M-G-M.

(5) BEST GLAMOUR PICTURE

First Prize—Frank Tanner of Linda Darnell in "It Happened Tomorrow," Arnold Prod., U. A.

Second Prize—Whitey Schafer of Veronica Lake, Paramount.

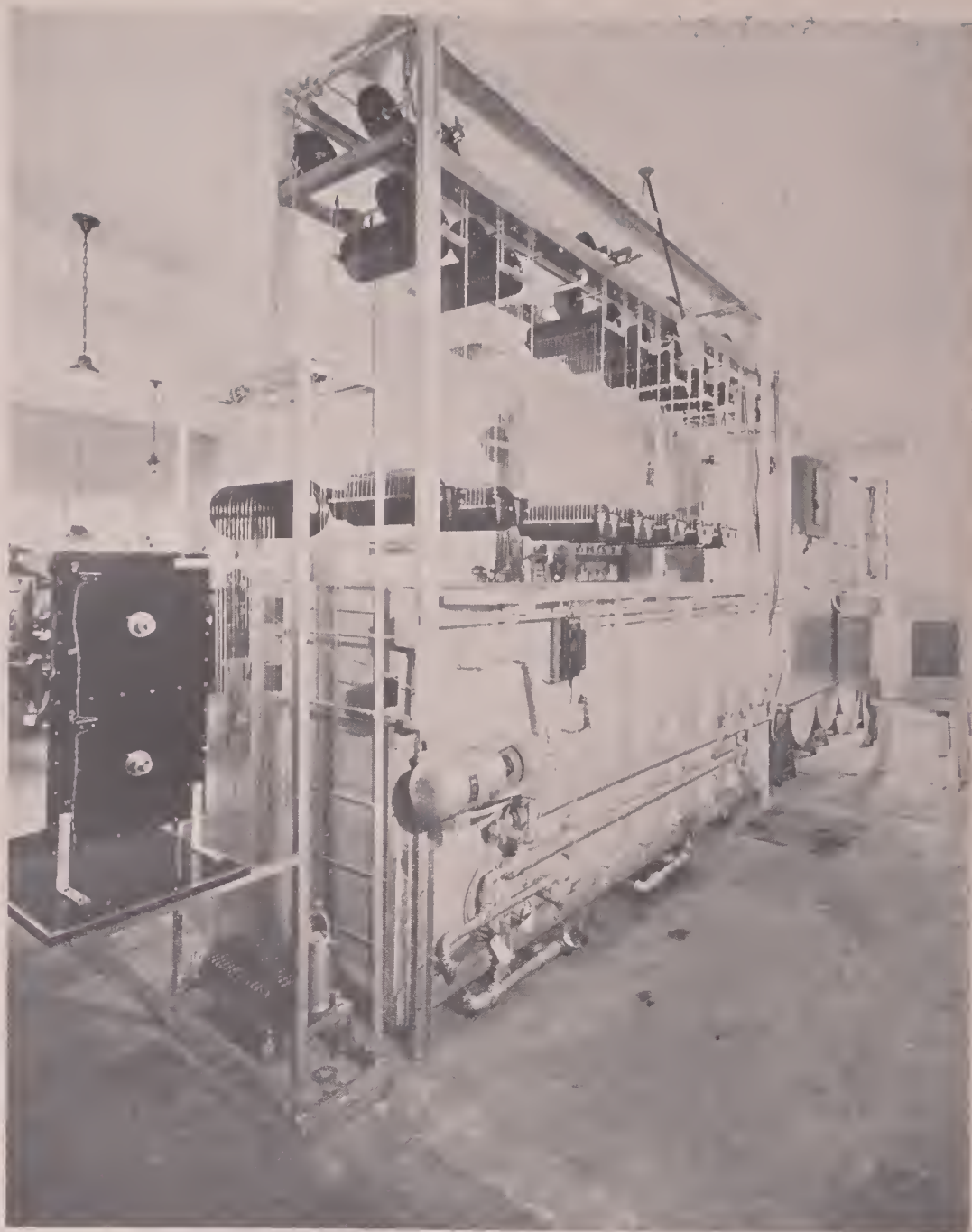
(6) BEST CANDID SHOT

First Prize—Floyd McCarty of Peter Lorre and Paul Lukas in "Passage to Marseilles," Warner Bros.

Second Prize—Mickey Marigold of Chinese Baby in "Mission to Moscow," Warner Bros.

(7) BEST POSTER ART

First Prize—Clarence S. Bull of Roddy MacDowell and Lassie in, "Lassie Come Home," M-G-M.



Above is one of the Fonda Machinery Company developing machines which are being used by many governmental agencies. These machines are designed to process 35mm and 16mm film simultaneously, or 32mm and 16mm simultaneously as well as any of the mentioned sizes alone. They also process microfilm, perforated or unperforated, and sound track. These machines are in use in many foreign countries and American commercial laboratories, as well as in governmental laboratories.

Second Prize—Henry Waxman of Jane Wyman as Helen Morgan, Warner Bros.

(8) BEST FASHION STUDY

First Prize—Henry Waxman of Jane Wyman, Warner Bros.

Second Prize—Alexander Kahle of Lillian Eggers in "Powers Girl," RKO.

(9) BEST PIN UP ART OF THE YEAR

First Prize—Ray Jones of Ramsey Ames, Universal.

Second Prize—Robert W. Coburn of Rita Hayworth, Columbia.

(10) BEST PICTURE IN RELATION TO THE WAR EFFORT

First Prize—Ernest Bachrach of Norman Rockwell poster, RKO.

Second Prize—Bert Six of Joan Leslie in Red Cross uniform, Warner Bros.

Dearth of Vacuum Tubes Faces Exhibs

Exhibitors will have increased competition of vacuum tubes during the next year unless the OCR is able to get a separate allocation for them. Under the WPB controlled materials regulation, issued last month, such materials are made more readily available to radio repair shops and theatre supply and service shops which get an AA-3 rating. But the 9000 theatres operating under service agreements have been getting their tubes through an AA-2 preference rating and their inclusion under the new order drops their rating.

With radio repair shops getting tubes under the same preference as theatres, the supply is bound to dwindle rapidly, as these shops service not only radios, but all sorts of amplifiers, juke boxes, public address systems, etc.



Presidents Edward B. DeVry of DeForest's Training, Inc., (left) and Wm. C. DeVry of DeVry Corporation, Chicago, explain to Wacs Vivian Holloway T/5 and Iva Cale T/5 of Panama City, Florida, and Pvt. C. R. Simon of Laredo, Texas, and Sgt. Walter Keeler of Yuma, Arizona, part of a contingent of specialist troops enrolled at DeForest's Training for special work on electronic equipment built by DeVry Corporation, the simple yet still effectively operating mechanism of their father's "suitcase projector" of 1913. Thousands of projectors developed out of this, the world's first portable motion picture machine, are today taking the teaching, reporting and morale-building benefits of movies to United Nations global production and fighting fronts. In honor of the 30th anniversary of the late Dr. DeVry's invention and the 67th anniversary of his birth, the DeVry Corporation announces the release to subcontractors, royalty free for the duration, of patented projector mechanisms which the U. S. Army and Navy, and the British Admiralty need in quantities beyond the capacity of a single company to produce.

DeVry Loans Patents To Armed Forces

IN celebration of the 30th anniversary of its founding, and the 67th birthday anniversary of the late Dr. Herman A. DeVry, its founder, DeVry Corporation, Chicago, announces the conclusion of arrangements whereby several of its patented projector mechanisms are released for manufacture for the Armed Forces.

DeVry's president, W. C. DeVry, explains the corporation action in the fact that the U. S. Army, Navy and the British Admiralty need patented DeVry equipment in larger quantities and at a rate of production in excess of one company's capacity to produce. Rather than expand its own facilities at the expense of time, critical machinery and government funds, DeVry released its

patents to subcontractors royalty-free for the duration. DeVry is currently celebrating the receipt of a white star for its Army-Navy "E" pennant, indicating continued excellence in producing motion picture sound equipment and electronic training devices.

DeVry Corporation was founded 30 years ago—in 1913—by Mr. DeVry's father as an outgrowth of his development and manufacture of the world's first portable motion picture equipment—a 35mm. "suitcase projector," which Dr. DeVry designed and built to take the entertainment and teaching benefits of motion pictures out of the theatre to the crossroads and classrooms of the world.

In addition to being responsible for many important developments in motion picture projector design and manufacture, Dr. DeVry was also a pioneer of visual education by means of motion pictures, which authorities say are speeding troop training 40 per cent, and materially accelerating the schooling of production workers on new skills and techniques. To teach radio and electronics with the aid of motion pictures, and in collaboration with Dr. Lee DeForest, often called "the father of radio and television." Dr. DeVry who is widely acclaimed as the father of visual education, founded DeForest's Training, Inc., Chicago.

Voice Recorded on Hair-like Wire

SIXTY-SIX minutes of continuous speech can be recorded on 11,500 feet of hair-like steel wire on a spool no larger than the ordinary doughnut, in a new type of wire sound recorder being built by General Electric Company.

Operating under a license of the Armour Research Foundation in Chicago, engineers in General Electric's laboratory are now engaged in redesigning the apparatus so that it can be manufactured in mass production to meet the demands of both the Army and Navy.

The recorder, itself, is contained in a small box, weighing about 9 pounds. It has many wartime uses, but perhaps none more important than in observation planes. Instead of the customary pad and pencil now used by pilots in making notes of what they see on scouting trips, they can dictate into a small microphone just as the busy office executive now uses a dictaphone. Instead of the observer's words being recorded on a wax cylinder they are recorded magnetically on wire which is but four one-thousandths of an inch in diameter.

Unlike the wax cylinder which is breakable, there is no apparent wearout to the wire. In fact, 100,000 reproductions have failed to alter its quality in any respect.

When there is no longer any use for the recordings, the speech can be readily "wiped off" magnetically, and the wire is as good as new for future recordings.

Magnetic steel wire recording is not a new idea. As early as 1898 Valdemar Poulsen, a Danish scientist, introduced the method and used it to record high-speed arc radio signals. However, suitable amplifiers were not available at that time and the quality was poor. With the new method developed by Marvin Camras, assistant physicist of the Armour Institute, many changes have been made and the quality improved so as to compare favorably with the ordinary phonograph records.

A recent report from England stated that the sound recorder is now being used in the war zones and that "a fight talk of a Flying Fortress crew, attacking Nazi airfields in France, was recorded on a small spool of wire."

This was brought back to England, and according to Major H. L. Nussbaum, "All the conversation of the crew inside the Fortress as well as the sounds of battle were brought back as an oral record of the 66-minute flight."

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The New Acme-Dunn Optical Printer

(Continued from Page 11)

The wipe-off device is shown mounted in the illustration, and is driven by changeable sprockets which permit practically an unlimited range of speeds. This arrangement is invaluable for moving-split-screen shots, and wipes timed to follow a moving object in the scene. The wipe device is easily moved forward and back for any softness of edge, and the wipe blade can be swiveled to any angle, with a positive lock in eight positions. Horizontal and vertical lens movements are calibrated to one-thousandth of an inch by dial indicators. Veeder counters are mounted to count projector frames, camera scene footage and camera cumulative footage. A variable audible timer controlled by the 16 frame selector switch is furnished as an aid in the timing of manually operated effect devices.

The projector has friction take-ups and a variable high speed forward and reverse rewind. The 35mm. projector head can be quickly interchanged with a 16mm. head for blow-up work. The camera has a right angle prism view finder with a highly magnified eye piece, and is fitted with register pins for special film-line-up work. An easily accessible hand fade control is furnished as well as a variable automatic fade device, if desired. The camera has friction take-ups, and can be fitted to take any standard type of 1,000 foot magazine. An anti-buckle switch is mounted inside the camera, controlling the motor drive. A camera color filter wheel is available for separation work.

The printing light is a prefocused incandescent air-cooled lamp, controlled by a Variac voltage control. It can be used diffused or clear, thereby having a great range of light values covering from the negative stocks, down to the slowest fine grain positive stocks. All electrical and mechanical units are easily accessible for servicing and adjustment.

Many and varied accessories are available for the printer and are furnished to suit the particular requirements of the installation. A small projector head for right angle mounting is furnished to make rocking, tilting, spinning, and special process shots, by means of a flexibly mounted prism.

A rear lens in the projector permits aerial image work, focusing at the aperture any image such as a painting, matte, animation, etc., which can be set at any distance behind the projector head. Double printing of two films is accompanied by using the double-spindle projector magazine flanges, which are quickly installed. If it is desired to make light changes from cut picture, a film edge roller micro switch can be mounted in the printer head, which will actuate the clutches where the film is previously notched.

The Acme-Dunn Optical Printer claims the distinction of being the first com-

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mercially built all-purpose optical printer developed from years of practical experience with major studio requirements. Our Government's urgent need for machines of this type has made possible the early realization of these new ideas in optical printer design. The machine was enthusiastically received when presented to the Society of Motion Picture Engineers at their Fall Convention in Hollywood. The first machine built is now in operation at the United States Naval Photographic Science Laboratory in Anacostia, Washington, D. C. Other machines are now being completed for the Signal Corps Photographic Center, Long Island City, New York, The Coordinator of Inter-American Affairs, Mexico City, and The Training Film Production Laboratory, Wright Field, Dayton, Ohio. Credit for valued assistance in the design of this machine is gratefully given to Cecil Love, formerly of RKO Pictures and now in the United States Navy, Albert Stoffe of RKO Pictures, Edward Furer, Bob Shea, and Oscar Jarosch of the Acme Tool & Manufacturing Company, Burbank, California.

Introducing Ansco

AMERICA'S oldest manufacturer of photographic materials has changed its name from Agfa Ansco to Ansco. President of General Aniline & Film Corp., the parent organization, and G. Harrison Echols, Ansco's General Manager. The change in the company's name became effective January 1, 1944.

The name change is the final step in a planned reorganization of the company which began when its ownership and management were assumed by the United States Government shortly after America entered the present war.

In recognition of the fact that the organization is not associated in any way with any other company whose products carry the name "Agfa," it was decided to revert to the name "ANSCO," by which the company was known for many years.

Ansco was founded in New York City more than one hundred years ago by Edward Anthony. In 1902 the Anthony organization was combined with the photographic division of the famous Scovill Manufacturing Company of Waterbury, Connecticut, and shortly thereafter the name Ansco, which is a combination of the "AN" of ANthony and the "SCO" of SCovill, was adopted.

Ansco, which today is supplying the greater part of its production to the government and war industries, has recently started construction of a \$1,000,000.00 addition to its film plant. This new building, scheduled to come into production in the late spring, will further increase Ansco's manufacturing capacity and thus make even greater amounts of film available for essential uses.

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Unseen Aces of The Camera

(Continued from Page 12)

challenged his imagination, his inventiveness; and his contributions to the art and technique of the camera mounted in an ever ascending spiral with each new release. Adapting the cranking idea he had had as a projectionist to the camera, Koney added zest to fight scenes, speed and tempo to chase sequences and became known as the father of the speed change. So that shooting would not be held up by rain, or cloudy days, he made the first photographic tests indoors with lights; using banks of blue globes.

From the very first Koney's work was marked by a precision and exactness that foreshadowed his later career as one of the outstanding special-effects cameramen in the film industry; a pro-

fession in which the qualities of precision and exactness are prerequisite. He never broke a reel between his interior and exterior takes. And in 1916, when there were no meters or non-halation film, he created a mild sensation among those who were in a position to appreciate his accomplishment by shooting a two reel picture, that included interiors, exteriors and stop-motion, so evenly exposed that the picture was printed on one light!

Vitagraph had a comedian who, in 1918, was headed right for the top. Larry Semon had a lot of ideas as to what constituted motion picture comedy, but he didn't seem to be able to get along with his cameramen. One idea Larry had was that trick effects could be worked out in the camera that would add a great deal to certain comedy situations if a man only knew how to handle a camera accordingly. And because Larry Semon was a man who went after what he wanted till he got it, the turn over in cameramen was terrific. No one seemed to have lasted more than two or three weeks. Then Koney went over to see Larry.

Koney Koenekamp and Larry Semon worked together as a team for eight years. Koney was cameraman, co-director and fair-haired boy who always seemed to be able to find a way to get Larry's crazy ideas on film and contribute some of his own into the bargain. It was a partnership that contributed a lot to the amusement of the motion picture going public, and one that originated much of the lore of trick photography.

Larry Semon really knew his stuff. Koney says no man was better adapted to action cutting than Larry, who was able to cut a picture in the afternoon and preview it that night. Koney's virtuosity with the camera is exemplified by an incident that occurred during the time he was with Semon. Colleen Moore, over on another lot, was having difficulty with a bit of business that called for some trick photography. The bit of business, as indicated in the script, was for her to read a magazine and be so surprised by what she was reading that her eyes rolled around in their sockets independently of one an-

other. What was not in the script was how the cameraman was to do it. And several of them had tried over a period of about six weeks. Colleen was getting tired of the whole thing and was about to drop it when somebody sent for Koney. Koney, retiring as usual, was reluctant to go; but Semon urged him on.

When Koney got over on Miss Moore's set he found all sorts of paraphernalia that had been set up in the attempts to shoot this particular bit of business successfully. To the consternation of his assistant, who had assisted the previous cameramen, Koney had it all taken away, made his set-up with the aid of a stand-in, and completed the shot, successfully, in fifteen minutes.

When Warner Bros., in 1926, decided to make Noah's Ark, that epic spectacle of disaster and destruction, Fred Jackman, A.S.C., who was in charge of photography, decided to play safe and send for his old friend Koney. The picture called for almost every known type of camera trickery, and for some then unknown. Koney was in his element. And the picture is remembered as being remarkable in its time for spectacles achieved through its "special effects." Of course there was no optical work in those days, and Koney's achievement can be better appreciated when we realize that in the animal sequence, for instance, he had to make as many as 18 exposures on the one piece of film, carting his camera meanwhile from zoo to zoo and from one background to another.

Koney stayed on at Warner Bros. and when that company moved to Burbank he started in the special effects department to which he has devoted himself ever since.

The introduction of sound films forced the next step in trick photography—the super-imposing of background behind principals. It had to come, because in no other way could dialogue scenes be shot realistically on noisy thoroughfares, in trains or in any of the other locations called for. If the thing could be done it had endless possibilities. Koney saw the possibilities and he found a way to do it. He developed and patented the method by which camera and projector are synchronized for background projection scenes; a tremendous contribution to the science of cinematography and its value as a dramatic medium. So, when you see the verdant countryside passing the train window, or the streets of Paris unwinding through the rear window of a French taxicab in which the principals are riding, or any of the other illusions made possible through the magic of the process-shot to heighten the realism and drama of the motion picture, you can thank Koney Koenekamp.

Incidentally, Koney's idea of a recent example of excellent process work—in which the possibilities of the system were used to the utmost and for the greatest dramatic effect, with all the necessary



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ingredients of skill and artistry combining to make the perfect illusion—is the picture “Airforce.” Three-quarters of that picture, containing the sequences with the most dramatic realism, were shot on Stage No. 5 on the Warner lot at Burbank.

“Northern Pursuit,” starring Errol Flynn and directed by Raoul Walsh, which is being released throughout the country currently, contains some excellent ski sequences which owe a lot to Koney’s “know how.” He has brought all the thrills of skiing, the hurtling through space, the dizzy plunges down precipitous slopes, the long glides through trackless snow-fields—faithfully to the screen. He did it by attaching an Eyemo camera, complete with batteries, to the back of the skier whose speed on some of the slopes reached the dizzying pace of 70 miles an hour. The jumps, which on the screen appear to have been made through rock-ribbed canyons and over trees, were really made on the regular Sun Valley ski jump. Koney blocked out the grandstand, and other signs of civilization, back at the studio and put in the rocks and trees and more formidable backgrounds.

Cold was one of the big problems that had to be overcome to get this snow sequence. It was 22 below in Sun Valley and the effect of this kind of weather on the cameras would be to stiffen their action and slow them down just enough so that the scenes shot in the snow would not coincide faithfully with the scenes to be shot subsequently, and which would provide the foreground action, in the studio. This was overcome by providing each camera with a small one cylinder generator to keep it warm.

Right now Koney is out shooting more snow scenes for the location work on “My Reputation,” starring Barbara Stanwyck and George Brent. He thinks he has a new wrinkle for making it easier to work in the snow with a camera. It’s a specially designed bob-sled, complete with camera mount and, in all probability, hot and cold running water.

A process shot is good, says Koney, only insofar as the component parts combine to make it an harmonious, integrated photographic unit. Artistically, background and studio shots must process the same photographic values; mechanically, every particular of angle, camera speed, dolling, etc., must, in both elements, bear the strictest relationship to each other.

The whole can only be judged by the standard of realism. Conversely, harsh lighting on the background with fancy lighting on the principals makes a displeasing composite because it is unreal, unbelievable.

When Koney has to use a library shot for background he studies it first on the screen and then from frame enlargement in order to get a true evaluation of the lighting, which is then duplicated for the studio shots. And the action of the principals is coordinated to fit the predetermined mechanical limits of the back-

ground. When he goes on location to get his own background scenes, of course, he makes his “key” shots from the script. But he never confines his shooting to a small area. He always shoots plenty of the scenery. It gives him more latitude with his process work and makes the studio insert more harmonious, more believable.

The motion picture industry is fortunate to have Koney Koenekamp in its ranks. His talents and contributions have enriched the medium. And though he is a difficult man to interview in the matter of his own achievements, one can’t get rid of the feeling that he has many new tricks up his sleeve.

So that is why Koney is always given the responsibility of working out the most intricate special effect shots as they come up on the Warner program. His toughest job is to spread his work over the many jobs that come into the department, always with instructions from the various producers and directors that Koney is to be given their assignment. Koney personally will become a more valuable special effect when he works out the details of dividing himself into four Koneys in order to be able to fill the orders for his personal services that come in almost daily. This is information gained on the outside, and not personally from this modest cameraman’s modest interview.

Motion Pictures’ Post-war Aims

(Continued from Page 22)

should be, and is being, recognized today as one of the imperative calls upon the best intelligence of the American motion-picture industry.

It is one phase, but perhaps a dominant phase, in the conscious, wise, and resolute shaping of the pattern of the future—for something that is not only a commercial product but is, at the same time, admittedly a powerful (though intangible) emotional, mental, and spiritual force that can contribute much to wholesome pleasure and reasoned progress in the decades and centuries to come.

Points for Pedalers

“Points for Pedalers,” a new sound motion picture designed to help more than 12,000,000 American cyclist to get greater pleasure and mileage from their bicycles, has just been produced and released by the Ætna Life Affiliated Companies of Hartford, Conn.

Approved by the Bicycle Institute of America, the picture shows the vital part that bicycles are playing in relieving wartime transportation problems but warns that unless bicycles are maintained and handled properly, accidents will occur.

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The Documentary Technique in Hollywood

(Continued from Page 10)

Life and Look acquainted him with the documentary "still." In other words, film taught him what war looked like. And, after Pearl Harbor he began to see American documentaries, for now there are hundreds of American photographers documenting the war at home and abroad.

Today a typical half of a double bill is Captain John Huston's *Report from the Aleutians*. With it, is a Hollywood picture on the war, or, for that matter, any sincere human story. The audience cannot help comparing them, and can draw only one conclusion: that the Hollywood concept is artificial and therefore unbelievable.

Now, when we hear of such proposed films as *Woodrow Wilson* and *One World*, we hope, and we expect that they will be handled realistically.

How do we approach the documentary technique?

When first arriving on the set, we observe that it should look real in every respect.

We select the most natural and interesting composition for the action to be played.

The next thing to determine is the natural source of light. A window by day, perhaps a lamp by night. We light for the particular mood of the scene. The light source should not be violated.

The actors should not be overly made up. If the story permits, and the actor is willing, we suggest no make-up, or that effect.

Now, for the movement of the camera. At no time should the audience be aware of the mechanical movements of the camera, such as dolly and pan shots. The audience should not be asked to accept shots from impossible angles. In reality, no camera rises through the floor or is suspended in air, without reason. Common sense determines the angle. Creative imagination, functioning within this framework, is not hindered—merely disciplined. Effects should express only the drama.

These are only a few of the most obvious points. Much care is involved in

photographing a picture in order to keep within the bounds of realism, as well as to attain it.

There is a familiar saying, "The Camera never lies." The Camera can be made to lie, but it also can be made to tell the truth.

Production methods of the motion picture industry creates formulas and patterns. The technical excellence of both men and equipment fits profitably into these patterns. It is not always easy for the cameraman, as well as others, to make a creative contribution.

The very machines which add to his efficiency often hamper his expression. With the event of sound, cumbersome equipment further handicapped him.

Equipment now in use by the Army and Navy, developed from the necessities of war expediency, cannot help contributing to the motion picture industry a new and much needed mechanical flexibility and simplicity.

After the war, I believe that 16 mm. film will take its place alongside 35 mm. It is true that for Hollywood use, improvements in both film and mechanical devices will be necessary, but they are on the way.

The small camera will not only lend itself more readily to the imagination of the writer, and director and cameraman, but it will solve staggering production problems as well. For one example, it won't be necessary to knock an automobile or a plane apart to let a camera in.

Many cameramen now in the armed forces will return to Hollywood with a finer appreciation of equipment and its use, along with experience in the making of documentary films.

Here, then, will be the expression of the inevitable relationship between mechanical progress and the greater truth and richness of conception of the men using this equipment. Hollywood already is beginning to use its technical excellence instead of being subservient to it.

Add to this the growing expectations of the audience, whose tastes are daily being influenced by the documentary films, and the future of making motion pictures looks more exciting and satisfying.

Good photography is always documentary in another sense. It never leaves the story for the sake of itself. It seeks to portray and interpret the story within the medium of the camera, limited or enriched by the creative understanding of the cameraman. The story is always first. The writer, with all of us engaged in film making, must demand that his subject be handled truthfully and realistically. Then we can be assured that in the future we will not lose the quality of realism in films and that we can maintain and develop the documentary technique, in Hollywood.

With serious fiction films closer to life, the motion picture industry, with its wide possibilities, will reflect with more dignity the human story of the war and the peace and the changes of our post war world.

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A Place Called Mulberry Street

(Continued from Page 7)

A notable feature of all Pal's Puppets is the richness and beauty of their coloring, the illusion of depth; the shadows are true shadows cast by the figures and objects themselves. The contrast of lighting is true and natural and follows as it should as the character moves through back and cross lighted areas. There is a very important reason for the unusual color values seen in these productions and that is George Pal himself unquestionably, his color sense and ability to demonstrate his knowledge of the application of color places him in a

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class of skilled colorists. Just as a great composer can take the thirteen notes of the musical scale and transform them into more beautiful sound combinations of melody than the average composer, so, George Pal can transform the colors of the spectrum into more beautiful combinations than the average artist.

But the pictorial element is not the only one of the completed production. There is the element of story quality; it must be vital and hold interest. Pal works feverishly with the story department. Then there is the musical score. In most cartoons the music is incidental, but in Puppets it is fundamental.

Music, dialogue and sound effects are scored in advance, the sound first and the action afterwards. Thus perfect synchronization is attained.

No other producer in the world is making puppet pictures in Technicolor for regular theatrical release. George Pal's Puppets have already passed the novelty stage. They have proven that they are here to stay. Audience response has demanded that they be given a definite place in the theatre program. The Puppets are solidly placed in the hearts of the theatre-going public.

In production now is the dream of the little boy whose only outlook on life in his world was the dirty streets and dark, narrow passageways of a grim, gray-dark portion of New York. The story is told by Dr. Suess in rhyme-verse and brought to life-action amid authentic settings of vision-fantasy by George Pal.

There is not a child or adult of any age or disposition but who will be moved to mirth and smiles, inwardly or outwardly, by the antics of the little puppets as they roam through a place called Mulberry Street.

New Filmosound Releases

MEN OF TEXAS (Universal) 9 reels. Rental \$17.50. The "Lone Star" State just after the Civil War. The courage and heart of immortal Sam Houston dominates this epic story of the conflict between those who supported their country and those who, under the guise of "State Rights," followed their own lawless interests. (Robert Stack, Brod Crawford, Jackie Cooper). Available from January 3, 1944, for approved non-theatrical audiences.

THE HORSE IN NORTH AMERICA. Color. 20 min. Rental \$6. The evolution of the horse on the North American continent, reconstructed by University of California scientists from preglacial fossil remains. (High school, college and general interest).

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Proper Editing

(Continued from Page 13)

create an interruption in the tempo of this fast action. Actions such as these must be cut to the exact frame.

The use of special effects and montages in pictures are techniques in themselves and will be covered in another article at a later date.

Two pictures were recently filmed by amateurs that had, in my estimation, the finest cutting and editing I have been privileged to see. At a recent contest of the Los Angeles 8mm Club, Mr. C. William Wade's picture "V for Vacation" and W. D. Garlock's film of "As Ye Sow" outranked all other entries for excellence in cutting and editing. This fine work established a tempo in the pictures that did not hesitate for an instant and as a result, I never relaxed from looking at the screen until the pictures was finished. And that is the proper way to hold the attention of your audience.

Keep your pictures forceful, interesting and well timed, and you will never find an audience that will not be enthusiastic over your efforts. Tell your story clearly, and cut and splice until your continuity is synchronous and has an even flow.

PSA Organizing Color Circuits

COLOR Division of The Photographic Society of America has announced plans for organizing and operating "Color Circuits" enabling individual photographs to obtain on loan sets of outstanding color photograph slides heretofore available only to camera clubs. Photographers who belong to no club, or to a club which has no color section, or who wish to study the work of other photographers, will find the loan set particularly helpful.

Members of PSA and of affiliated camera associations and clubs will be able to obtain "Color Circuit" service by themselves lending two to five slides to each set, it is explained by Color Division Chairman H. J. Johnson, of 1614 West Adams, Chicago 12, Illinois. Each participant lends two to five slides to a set of 50 assembled by the Color Division for each "Color Circuit." Each slide must be glass-bound, spotted, titled, and show owner's name and address.

Each complete set will be sent on schedule to each participant, with a "Comments Sheet," presenting a brief criticism of each slide. Sets will be retired, slides returned to the owners, new "circuits" organized when all slides have been viewed by every participant.

Photographers desiring to participate in "Color Circuits" have been asked to contact Chairman Johnson by mail, indicating the nature and number of slides they will lend. They will be notified when and where to ship their slides, and when they will receive complete sets on loan.

The Camera is a Weapon

(Continued from Page 16)

You are under orders to make combat pictures. You must obey those orders. And if the reasons for your being attached to any unit are carefully and clearly explained, help and cooperation will be forthcoming. Plans for assisting you in these situations are being formulated at this moment. When you go on duty you may be given a Letter of Instruction which will outline your duties and what help is required. You may be working directly under Staff Photo-

graphic Officers who will see to it that you, who have been trained as skilled photographers, will not end up as Mess sergeants.

But even if none of these plans go through, the responsibility of getting enough information to lay out your camera tactics still rests with you. That's part of the burden of being pioneers—and part of the satisfaction.

You are combat photographers. Your training is over—and in a sense it's just beginning. You do your fighting with your camera. Shoot it well—and see that every shot counts.

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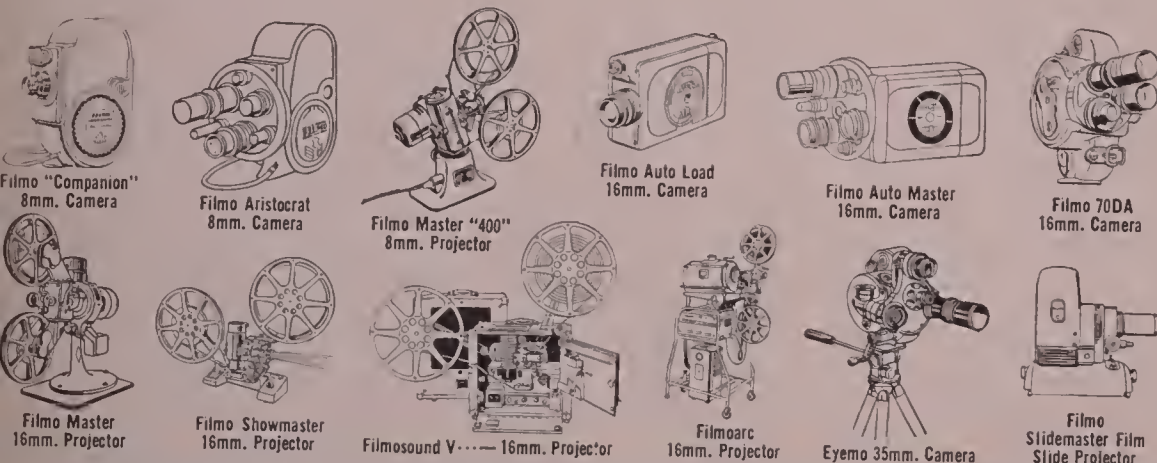
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In This Issue . . .

Fighting Cameramen



February
1944



A wink tells the story

HOW Du Pont raw film stands up during the period between manufacture and exposure is determined by aging tests which are conducted at the Du Pont Research and Control Laboratories.

Here we see laboratory assistants operating a Stroboscopic Photo-electric Densitometer. It simplifies and automatically improves the accuracy of density measurements used in

determining speed and contrast.

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That's why *most* of the newsreel history you see is Eyemo-filmed. Next time you see a war newsreel, note its technical excellence . . . then imagine the difficulties under which the cameraman must have worked.

Then you'll realize why Eyemo is the first choice of seasoned cameramen on battle fronts . . . in

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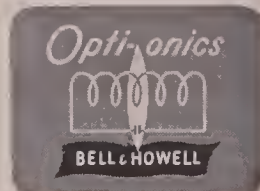
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AMERICAN INEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

FEBRUARY, 1944

NO. 2

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The Front Cover

AS this issue of the Cinematographer goes to press voting has begun in the 16th Annual Awards of Merit of the Academy of Motion Picture Arts and Sciences. Academy technical committees are spending their nights viewing films to decide the best achievements in cinematography, film editing, special effects, sound recording, art direction. In other fields, such as acting, directing, writing and best production, more than 4000 persons are voting in the nominations. So, with "Oscar" the main topic of conversation, we have placed a composite picture of eleven "Oscars," by Herbert P. Bond, upon the cover.

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IN THERE PIXING

THROUGH the EDITOR'S FINDER

ON the opposite page is a cartoon drawn by Glenn R. Kerschner, A.S.C., which tells more about the cameraman under fire than can a thousand words. It is well worth anyone's while to spend a little time studying it, for it will give the reader a comprehensive idea of what our combat cameramen are doing, and where.

At every front cameramen in uniform are advancing side by side with the fighting men filming the steady advances of our forces and recording history in the making. There is a difference between charging into the enemy lines with a gun in your hand than charging with nothing but a camera with which to shoot. It takes courage to stand in the midst of bursting shells and efficiently operate a motion picture camera. Many of these combat cameramen are dying. Sure, but for everyone that dies two more are ready to take their places.

On land, on sea, in the air, the cameramen are filming a pictorial history of this world-wide struggle which has never been equalled before. Many of them are from Hollywood. Many of them are members of the American Society of Cinematographers: men whose only contact with war was in filming phoney war scenes for a Hollywood feature picture. There are other cameramen, too. Men who have never operated a camera before. Many of these were trained by members of the A.S.C. here in Hollywood.

If you want a first-hand picture of cameramen under fire read the article in this issue of Alvin Wyckoff about the experience of Jack Mackenzie in filming the battle of Midway, which appears on the next page. When you read that article turn back to Kerschner's cartoon and see where else just such bravery is being exhibited by the fighting cameramen. Then you will realize that these men have real intestinal fortitude.

Cameramen from our fighting Allies are doing the same thing with their armies, and in the March issue of the Cinematographer there will appear a special article entitled "Russian Cameramen at the Front." This article was written by Roman Karmen, Cinematographer Winner of the Stalin Prize, and was sent direct to us by wireless from Moscow. It is a moving document by one of Russia's greatest cameramen who, too, is in the front lines with only his camera.

"OSCAR" time is just around the corner. On the evening of March 2nd the Academy of Motion Picture Arts and Sciences will hold its 16th Annual Presentation of Awards of Merit for outstanding achievements in the creative art of film making. It is always a great night in Hollywood, and a greater night for those who receive the coveted statuettes.

Winning one of the Awards of the Academy of Motion Picture Arts and Sciences is universally regarded as the

highest honor that can be won by any of the creative artists of the film industry. That golden statuette, known to the world as "Oscar," indicates that the recipient's fellow craftsmen recognize that he has done the best job of the year in his field.

There are many who wonder how the Academy selects the cameraman who wins the award for Black-and-White cinematography and the one for color cinematography. Now and then you hear disgruntled individuals remarking that there was unfairness. Well, so that the readers of this magazine can know exactly how the Cinematographic Awards are selected we herewith print the exact rules from the Academy's official bulletin outlining the rules for all the more than twenty awards that are given in various fields:

SPECIAL RULES FOR THE CINEMATOGRAPHIC AWARDS

Black-and-White Cinematography

(1) The Directors of Photography associated with each studio shall select not more than two black-and-white productions produced by their studio, which production or productions shall be included on a nomination ballot to be sent to all Directors of Photography in the industry.

(2) From those productions selected in accordance with Paragraph (1) above, each Director of Photography shall vote for ten productions in the order of his preference. The ten productions receiving the greatest number of votes shall be considered nominated for the Black-and-White Cinematographic Award. This voting shall be by secret ballot, by the preferential system, and shall be governed by the regular Rules applying to this system of voting. The ballots shall be tabulated by a Committee to be known as the Cinematographic Awards Tellers Committee to be appointed by the Chairman of the Photographic Section.

(3) In the event that two achievements by one Director of Photography (having a single, not joint, credit on both such achievements) shall receive sufficient votes to be nominated, only the one receiving the most nomination votes shall be placed on the final ballot. The nomination votes for the second achievement shall be redistributed and the candidate of the next highest standing included among the nominees.

(4) The one production to receive the Award shall be chosen from the ten nominated productions by a vote of all Directors of Photography in the industry who shall be given an opportunity to view these productions in advance of the voting procedure. In the final voting, each Director of Photography shall name only that production which he believes to be the Best Cinematographic Achievement of the Year. Ballots shall be sent directly to the Academy Auditors in line with the regular Academy Awards voting procedure.

(5) As outlined in Paragraphs (2) and (4), all Directors of Photography in the industry shall be eligible to participate in the nomination and final voting to select the production to receive this Award. In order that the list of Directors of Photography shall be complete, individual lists of the Directors of Photography in each studio shall be obtained from the heads of each studio Camera Department and or any other available sources, and shall be checked and approved by the Cinematographic Awards Eligibility Committee to be appointed by the Chairman of the Photographic Section. This Committee will be charged with the responsibility of the preparation of a full and complete list of Directors of Photography.

(6) Cartoons shall not be eligible for this Award.

Color Cinematography

(1) The production to receive the Award for Color Cinematography shall be chosen by exactly the same procedure as specified in the Rules above governing the Black-and-White Cinematographic Award, with the exception that only six productions instead of ten shall be nominated for the Color Cinematographic Award.

(2) Cartoons shall not be eligible for this Award.

After studying the above rules, it would seem that none can say the Academy is not trying to inject the height of fairness into the selection of the two cinematographic prizes.

TEN black and white and six color features have been nominated for photographic Oscars in the coming Academy awards. The pictures, their lensers and the lots where made follow:

Black and white: "Air Force," James Wong Howe, Elmer Dyer and Charles Marshall, Warners; "Casablanca," Arthur Edeson, Warners; "Corvette K-225," Tony Gaudio, Universal; "Five Graves to Cairo," John Seitz, Paramount; "The Human Comedy," Harry Stradling, MGM; "Madame Curie," Joseph Ruttenberg, MGM; "North Star," James Wong Howe, Samuel Goldwyn; "Sahara," Rudy Mate, Columbia; "The Song of Bernadette," Arthur Miller, 20th-Fox; "So Proudly We Hail," Charles Lang, Paramount.

Color: "For Whom the Bell Tolls," Ray Rennahan, Paramount; "Heaven Can Wait," Ed Cronjager, 20th-Fox; "Hello, Frisco, Hello," Charles Clark, 20th-Fox; "Lassie Come Home," Len Smith, MGM; "Phantom of the Opera," Hal Mohr, Universal; "Thousands Cheer," George Folsey, MGM.

H. H.



Jack Mackenzie, Jr., Photographers Mate First Class, all dressed up for inspection. For four days he worked and sweat filming the battle of Midway while the Japs poured everything they had at him and his mates. It is men like Jack who are in the thick of the fight on every front, shooting with film.

Fighting Cameramen

By ALVIN WYCKOFF, D.Sc., A.S.C.

as related by
JACK MACKENZIE, JR.

AS sailors in the Navy go, Jack Mackenzie, Photographer's Mate First Class, looked like the rest of them, but—there was a difference. He did his fighting with film instead of bullets. Under fire, with danger poking at him from all sides, he was steady of nerve and alert for the best chance to get a telling picture. About the only worry he had was a disturbance as trivial as any he could experience in the peaceful quiet of his own home. This characteristic was brought out in his remark about the beginning of the battle:

"All of a sudden I was brought to my feet in a daze out of a swell dream. I thought I was back in the studio in Hollywood working on a beautiful picture when I came awake. Hell had broke loose all around and above me. Those little monkey men were blasting with everything they had from machine guns to block-busting bombs.

"The sun was just breaking along the horizon in a beautiful warm glow tinting cloud edges a pale pink under a dome of clear blue sky, and the ocean was as calm as a kitten after a bowl of cream. The beginning of a perfect

day for shooting color, and as it turned out, for shooting bullets too. For two weeks, since I had been on the island, every morning had been the same. Perfect atmosphere for color photography. All the year around it's the same out there on that little Pacific island. The grandest place in the whole ocean to find absolute quiet and peace—if that's what you want. Nature rests there in a Paradise of harmony.

"A group of small islands 1800 miles west of Honolulu. The main island is no more than a mile long and only three-quarters of a mile wide with the highest point not over fifty feet above sea level. The only people that have ever lived there as residents were employees of the trans-Pacific cable station, and the trans-Pacific airplane service that was established in 1935. That was the picture before all this trouble happened, before the Japs went loco. On the map of the Pacific Ocean, just a pin-point. I'm talking about Midway Island, where one of the hottest engagements in the early part of this war was pulled off, and it was a grand show.

"For the past two weeks it had been

whispered about, that the Japs were going to attack us in force—attack with everything they had, cruisers, battle-wagons, airplane carriers, and submarines. It was rumored that they had declared they would clean off the top of the islands, blow 'em apart and sink 'em into the ocean. Flushed with their Pearl Harbor sneak they felt cocky—and believe me, when they started their big attack on Midway, they acted cocky!

"For four days the battle waged over the island and out over the ocean. By the end of the fourth day a lot of damage had been done and a lot of blood had been spilled—and it wasn't all our blood either. We suffered a lot, but the cocky Japs crawled away limping and so crippled that they've never attempted a come-back to disturb that peaceful Midway quiet.

"The battle started about twenty miles out in the ocean where our planes had spotted them coming in. We, on the island thought, as the day wore on, that all the fuss would probably stay out there over the ocean.

"So I could have a good spot to work from, if the battle did get over our way, I climber up to the top of the powerhouse tower, the highest spot I could work from: it was a nice peaceful spot and from where I could view the entire island unobstructed and far out to sea. My B and H Filmo 70 was loaded with Kodachrome and a good supply in my film case. I settled down to waiting, basking in the glorious sunshine. I bunked there that night so as to be on hand in the early morning if anything happened—and it did!

"When I was awakened those playful Japs were streaming in and all our batteries and shore planes were blazing away at them and knocking them around beautifully. Jap planes were falling in flames all over the place; even as far out as ten miles I saw one dive into the ocean leaving a long trail of black smoke behind him. It was a beautiful sight.

"Up there on top of the powerhouse tower, and out in the open, I had every advantage to get the pictures I wanted. I got a swell shot of a Jap formation coming straight in toward me. It looked as though it would go over me when they suddenly broke formation for bombing and strafing. Then my film ran out. While I was crouched down reloading one of the planes out of the formation came tearing over the powerhouse looking at me right out there in plain view with nothing to shoot at him but film. But he passed over and I worked fast to get my camera loaded when—WHAM! I was bounced flat on my face by the terrific explosion of a

bomb that had missed the power house by only twenty feet—and I had missed a good picture. That's the only thing that hurt me during the whole four days of battle. But—I didn't stay there on top of that power house tower to invite that Jap back. I didn't have to because he got plugged by one of our batteries and dived on top of the island in flames. I didn't lose any time getting down the ladder to the next landing where I wouldn't be out in the open so much, down where I had better shelter, but I had to run around the tower on the outside walk to photograph the rest of the battle action.

"By this time they had riddled the hangars and set them on fire. The hospital too was smashed and on fire, and the commissary was all busted up and burning fierce and one of our oil tanks was on fire sending a plume of heavy black smoke high up into the atmosphere. It was a merry little hell all around.

"From a peaceful little island of restful quiet, Midway had been churned into a mass of debris, noise, and burning installations. It was a sorry looking place.

"I guess my rabbit's foot, still snug in my pocket, had warded off from me all the evil danger that had been dished out through those four days.

"Lucky for me too that matters had so turned out that I was assigned to duty on the island. At one time I thought I was going to be assigned to General Tinker on his Wake Island attack when Commander Ford intervened and kept me with him. Of course I was disappointed, I wanted to make the trip with the General. I wanted to get into action. Things had been pretty quiet up to that time—too quiet. General Tinker never came back. He was lost during the attack. No one knows how or what happened. He and his plane have never been heard of since that battle. He was a fine commander was General Tinker, a full blooded Indian with the courage of God. We almost lost Commander Ford too in the Midway action. He got a piece of metal in his arm from the bomb that exploded when it missed the power-house. The Commander was photographing action with a little magazine 16mm. camera at the time. He didn't miss any shots either up to the time he got hurt.

"We lost a lot of our boys in that action out there over the ocean. Much of the film that was shot of the sea action was done by Lt. Kenneth Pier with a little 16mm. camera you could carry in your coat pocket—and did he do a swell job? His film had a lot to do with the success of the picture that was released to the public. He flew with the planes off the Hornet.

"After the battle I was kept pretty busy photographing records of the destruction, interrupted only as each rescue squad with wounded and fatigued men who had been adrift in little



Photographers Mate First Class, Jack Mackenzie, Jr., talks it over with the crew of a P.T. Boat at Midway. Jack is second on the right facing the crew. They had a lot to talk about after the Japs had passed over.

rubber boats were brought in. Some of them without boats kept themselves afloat by inflating their life-jackets. I made records of all of them for Washington.

"I'm here to tell you those men had guts too! They had everything it takes to make a good fighter! Not one of them complained or whimpered or even squirmed when the doctor probed a raw, bleeding wound before applying first aid bandages. Some of the men were so exhausted from exposure in the water and sun and lack of food and water to drink that they had to be carried; they cried, not because of any hysteria, but of their weakness, because they didn't have strength enough to carry on by themselves. They would plead to let them alone until after the seriously wounded men were taken care of first.

"What hadn't been destroyed of the hospital equipment was quickly set up and put into shape to take care of the men as fast as they were brought in, and I'm telling you those doctors, their assistants and nurses, worked! They never stopped working, day and night, until every man's case had been properly disposed of. The most any of those men asked for in their suffering, while the doctors were probing, was a cigarette, or a drink, or a little food.

"With the commissary and our food stores all scrambled up there was little for anybody to eat until relief supplies could arrive from Honolulu via plane. Everybody had to go hungry rationed to one sandwich a day.



Above we see young Mackenzie stripped for camera combat duty at Midway. This was the way he was dressed when he stood on top of a power house and filmed the attacking Jap planes as they rained bombs around him.

"As the days passed and we got the fires out and the island back in shape, we settled down to a daily routine of easy life once more.

"The night before I left for Honolulu to get our film processed, I sat in with a bunch of Marines in a little poker game and won thirty bucks—a sort of Scotch trick, waiting until my last night on the island!

"As for real money in that place you might just as well have a pocket full of seashells, they'd buy just as much as money would. That's one place where money has no value, there's nothing to spend it for. Nothing it can do for you until you can get back where it circulates—and that's where I was going."



Aces Of The Camera

Leonard Minuse Smith, A.S.C.

By W. G. CAMPBELL BOSCO

WHEN the American Society of Cinematographers elected Leonard Minuse Smith, A.S.C., to be its President, that august body paid a most deserving compliment to one of the more able members of the camera profession and one who is universally appreciated as a "darn good guy". Their confidence was by no means misplaced. No society or association ever had a president of greater integrity or sincerity, or one who had a deeper interest in the welfare of the society or its associates. Len Smith is deeply conscious of this tribute paid him by his fellows. He considers the presidency of the A.S.C. the greatest honor that can be paid a cameraman, and his election to that office the high spot of his career.

Len is one of the Brooklyn Smiths, which seems to have been inevitable since his family had been hanging around that borough for a lot of genera-

tions. In fact his great-great grandfather was the famous Peter Minute, (a name which through the years seems to have become Minuse) Governor of New York State. And as Len reminisces about his early life the story bristles with the names of people and places dear to the heart of every loyal son of Brooklyn.

After getting the fundamentals of his education at P.S. 9, an institution of learning that also counts Clara Bow among its alumni, Len went on to Rutgers. Being a true Brooklynite, he majored in baseball, and, as any true Brooklynite will tell you was inevitable, he was good. In fact he was so good that Jake Daubert, who was the first baseman of the Brooklyn Ball Club in those days, wanted to use his services professionally. But Len was still a minor, and his father said "no!" And he kept saying "no" until Jake and Len cornered him one day in Al

Schmidt's Cafe on Fulton Street and, after a scene that would do credit to the imagination of a first-class dramatist, put his permission on the dotted line.

So Len made his bow as a professional baseball player, playing for Newark, N. J., in the International League. That was the year they won the pennant.

So far so good. Everything was O.K. and Len thought life was just a bowl of cherries. He was playing baseball, and getting paid for it. He was a member of a champion team. But, as every true Brooklynite will tell you, anything as far away as New Jersey is a foreign country. Len's ambition was to play on the home team. He almost realized that ambition. Charlie Ebbetts had him signed and sealed, but before he could be delivered he was hit on the arm by a baseball bat. It was a nasty blow that tore ligaments and forced the cancellation of a promising career.

Baseball's loss turned out, eventually, to be motion pictures' gain; although Len's first efforts were humble enough and made no noticeable impression on his contemporaries or improvement in the product. On the other hand, the six dollars per week that Len received for his services, particularly after the comparative munificence he received as a ball player, made no noticeable impression on him. In fact, the only thing that did make this stipend acceptable was that with it went the title of "assistant developer" and the thrill of being connected, however remotely, with that new wonder of the age—the motion picture.

Len's father couldn't see anything in motion pictures. Sure, he agreed, they were quite a novelty. But did they have a future? Father didn't think so. That was why, when Len asked his father to use his influence with his friends, the Messrs. Smith, Blacktour, Rock, owners of the old Vitagraph in Brooklyn, to get him a job in the fascinating new industry he used it to get his son the most unpleasant and, what was worse, most confining job on the lot. Father was sure it would discourage his son. Len should have been discouraged. With the six bucks and the title went some of the most disagreeable tasks. Mopping the floors, taking up and scrubbing the duck-boards and keeping the tanks clean were among them.

You'd think Len would have had enough of water and wetness during his working hours, but he didn't. He was an active member of the Manhattan Beach Swimming Club of Brooklyn. And when a newspaper sponsored an endurance swim from The Battery to Sandy Hook, some 23 miles, Len, having regained the use of his injured arm, promptly became one of the contestants. And he was one of those who finished the gruelling course. Perhaps it was that feat of strength and endurance that prompted Walter Arthur, Vitagraph's head cameraman, to realize that

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Aquiring Balance In Color

By F. M. HIRST

PICTURE to yourself, if you can, a colorless world—one in which all people and objects are seen in tones of grey. "Uninteresting," you say. Yes, I quite agree with you. The influence of color in our daily lives is so great that it cannot be ignored. We are so accustomed to seeing color all about us that most people take it for granted. Not many realize the tremendous effort that is exerted in art and industry to attain the lovely effects that enrich our daily lives. Deeper understanding and appreciation of color can come only with close association and keen observation of it. Harmonious color is likened to beautiful music, and as discords in music upset our nerves, so do discordant colors.

Can the principles of color harmony be successfully applied by the average movie maker? The answer is definitely yes! Do you remember that shot of the autumn foliage—a blaze of yellow and orange against a blue sky? Did the photographer just happen to look up and see it, or did he remember that the combination of gold and blue is true color harmony, and plan his picture that way? Most of us photograph the natural beauty which surrounds us, yet few of us apply the simply fundamentals of color harmony. The beauty of a scene usually impels us to bring the camera to the eye and shoot. It is true that many movie-makers will try for a better camera angle to improve composition, but how many try to balance the color in a scene.

When we speak of balance we mean the opposition of light shades against dark shades, small patches of brilliant color against large masses of subdued color, large areas of pastel shades with small areas of bold color. Once we have mastered this art, our pictures become more striking and gain in character.

One summer, while traveling through Glacier National Park, we came upon a breath-taking view of Blackfoot Glacier. In the foreground was a deep valley filled with fir trees reflecting many shades of green. A few fleecy clouds emphasized the brilliant blue of the sky; blue haze added to the beauty of the distance. Here was a scene for which we had always longed; but it lacked warmth. At the base of a steep embankment a bright patch of yellow bear-grass attracted our attention. I knew a touch of yellow would add immeasurably to the scene; not only would it supply the needed warmth, but add

balance and harmony. Descending the bank, I placed the camera so that two or three huge flowers were nicely centered in the lower half of the frame, using the distant glacier as a background. (Incidentally, a meter reading of $f:6.3$ for the scene and $f:9$ for sun-lit yellow flowers was quite a worry until I found a cluster of flowers in the shade of a tree. This brought the light meter reading of flowers and scene close enough for good exposure.) I shot the scene, and the resulting color scheme of blue and green, balanced by the creamy yellow flowers, more than repaid me for the inconvenience of the difficult climb to join my party. By this time the bus driver was tooting the horn quite vigorously!

We have spoken of yellow and gold harmonizing with blue. If brown earth or a boulder had been used in place of the flowers, we would have obtained the same pleasing effect.

At St. Mary's Lake I had a similar experience. Green was the predominating color in this scene. Reflections of sun-lit trees on the water tend to turn the lake into a beautiful emerald color. What should I use for balance? The sun was shining on the needles of a dead fir tree and they appeared a brilliant russet. Here was my color scheme. Russet and green are always good color harmony.

I would like to add a word of warning about the use of red in average scenes. Beware that this accent does not become so over-powering that it detracts rather than adds to your picture. To illustrate, let me tell you of another experience. While shooting Going-to-the-Sun Chalets across St. Mary's Lake, a young lady came by with a red sweater on her arm. She consented to pose for me wearing her sweater. Placing her about 50 feet from the camera in the lower righthand corner of the frame, she added just a touch of red to the scene. If this figure had been placed closer to the camera, the eye would have been attracted to the mass of red rather than to the scene in general.

The principle of balancing color may easily be understood by any movie maker if he will think back to the simple color harmonies of his school days. Let us refresh our memory by reviewing the colors of the solar spectrum, which are red, orange, yellow, green, blue and purple. These are the principal colors seen in a rainbow, or as light rays are decomposed or dispursed

by refraction, through a prism. Let us describe a circle and divide it into six equal sections. Then place the colors of the spectrum in their clock-wise order, and we have:



A quick glance shows us that the warm colors—red, orange, and yellow are in one half, and the cold colors, green, blue and purple are in the other half of the circle of hues. We also will notice that the complimentary colors are diametrically opposite each other: green opposite red, blue opposite orange, and purple opposite yellow. This is why complimentary colors are often referred to as opposite colors. If we remember that complimentary colors are always harmonious, we have the fundamentals of simple color harmony.

Also we will see by our chart that all complimentary colors are contrasting colors, but not all contrasting colors are complimentary colors. Contrast may be obtained by combining light and dark shades of the same hue. This is very effective in title work. It is easier and safer for the amateur to obtain good results by the use of light and dark shades rather than using complimentary colors. Our object is to make a title attractive and easy to read, and avoid the mistake of flooding the screen with too much color. However, I do not want to give the impression that complimentary colors should not be used, but I do say that care should be taken in their selection. Many lovely effects can be produced by the use of one hue high in value and its complimentary hue of low value.

I remember seeing a film which had been taken with great care; the exposures were good and it was well sequenced. The one jarring note was caused by the wrong use of color in the titles. Red title letters had been used on a yellow background paper which represented knotty pine. The idea was excellent, for it carried out the rustic feeling of the picture. The fault lie in

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Phil Tannura says a cameraman must be able to combine mood with composition. At left is a good example of that combination.

What It Takes To Be A Cameraman

By PHIL TANNURA, A.S.C.

I HAVE been asked, "What does it take to be a cameraman?"

It may be difficult to answer this question in a completely satisfactory manner because to do so would require the consideration of intangibles, such as qualities of temperament, that would not lend themselves to discussion in an article of this kind.

First, a cameraman must be an artist. A commercial artist perhaps, but an artist nevertheless. He must have a pictorial mind. Be able to see, in his mind's eye, the effect he would achieve of light, shadow and composition to best suit the mood of the scene he is about to shoot. To properly evaluate the mood of a scene, he must possess a sense of the dramatic, and be able to implement and heighten the work of the actors and the director.

But a cameraman can only make full use of these attributes when he is working with a director who is himself pictorially minded. Such a director is conscious of the contribution a cameraman, with his more specialized knowledge, can make; and, being sympathetic to pictorial values, is receptive to the cameraman's suggestions and point of view.

John Ford springs to my mind at the moment as an outstanding example of a

pictorial minded director. His pictures are not just photographed, they are photographed artistically. It has been said that any single frame from one of John Ford's pictures, if blown-up and framed, would possess all the elements of a prize-winning picture. And the success and acclaim that Mr. Ford's pictures have received should be answer enough to those who would argue that a highly pictorial picture all other considerations being equal, is not commercial.

Photographically the modern cinematographer becomes commercial by the demands of the motion picture-going public, who want to "see" the stars, and from the commercial consideration that the play is the thing. If one could light every set according to the principals of pictorial perfection, and ignore the necessity of lighting the characters in the story, every scene could be like a painting and every cameraman a real artist.

But a cinematographer does not strive to be a pictorial perfectionist in this sense. The characters in the story, particularly the stars, have to receive lighting preference for story value and commercial reasons. To be too "arty" is to fail in the role of the dramatic entrepreneur; to be too commercial is to

violate the artistic canon. The successful cameraman must know how to balance one against the other.

Despite the fact that both the cameraman and the director assigned to a production are working towards the same end, some directors unwittingly work against their own interests by being at cross purposes with the cameraman by failing to take him into their confidence. Such a condition must reflect itself in the finished product. On the other hand, the perfectly integrated production in which the principals are seen to their best advantage, the director gets most value out of characterization and story, to the accompaniment of the most effective and pictorial photography—is obtained with complete collaboration between director and cameraman. This is not meant to suggest that the cameraman should try to out-direct the director. Only that he can contribute more towards a better end result by exercising fully his responsibilities as director of photography.

Then there are certain stars—who owe their positions in the firmament of the Hollywood heaven, to some extent at least, to the cameraman's skill—who consistently work against their own interests by adopting unorthodox ideas about the manner in which they should be photographed and by demanding that their ideas be carried out. Some stars present problems because of make-up idiosyncrasies. One prominent feminine star insists upon wearing a most unsuitable and dirty looking make-up, which is most detrimental to her glamorous intentions, and which only succeeds in complicating her cameraman's problems as he strives to counteract its effect.

But whatever happens on production the cameraman bears the responsibility of turning out a good "picture." He is judged by the results on the screen. Few people, seeing the picture, will know or care whether the cinematographer credited with the picture was handicapped by an unsympathetic director or a hard-headed star. The cameraman must, however, by the very nature of things work to please the director and the star. But he must also please himself to the extent of doing what he considers to be right, if, for no other reason than to protect himself and his reputation.

Under any circumstances a cameraman works among people who are extroverts and temperamental, frequently under conditions of nervous strain in which temperaments clash. Therefore, in order that he may better, and more quickly get the results he is after, a cameraman must be a psychologist. And, if he would accomplish his end harmoniously, a diplomat too.

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Scenario For Interior Lighting

By CLAUDE W. CADARETTE

MANY times, amateurs are at a loss during the winter months to do any filming, as the weather conditions do not permit good shooting out of doors. This month I am outlining a scenario that can be filmed indoors with artificial light and the scenes for the most part, may be taken within one house.

Amateurs must use the greatest caution when filming a dramatic scenario in choosing their actors as a tense, dramatic sequence can easily become a comical situation if the characters are not properly directed and tend to over-act or over-emphasize their emotions. Any drama requires capable direction and the skillful use of lighting for the desired key and emotional feeling. This scenario will take considerable thought and special camera effects, but it is not too difficult and will provide many evenings of fun.

"Conscience"

Main Title: "Conscience" lap-dissolves or cut to

Characters: "The girl
"The man
"Police Officers

Photography by
Fade-out
Fade-in

Long shot: The girl is sitting at a desk writing a letter. She looks up and seems to be thinking of something more to add to the letter.

Cut to a close-up: The girl continues to write and finishes the letter.

Close-up of letter from over her shoulder as she signs her name. The letter reads "your insane jealousy has killed my love for you and I have fallen in love with Charles, Sincerely, Margol."

Medium shot of girl as she folds the letter and the scene fades out as she addresses the envelope. End of first sequence.

Fade-in to a night shot of an automobile coming to a stop at the curbing.

Medium shot of the man alighting from the automobile and walking toward his home.

Close-up of man stopping at the mail box to collect his mail his face registering surprise as he seems to recognize the girl's handwriting. He enters the house.

Shot inside of the house shows man entering and cuts to a close-up of him as he sits into a chair. He opens the girl's letter and reads it. At this point the man shows a stunned expression on his face and clenches the letter in his hand. His facial expressions should depict an uncontrollable temper and jealousy. Direct this action very carefully to give the audience the correct interpretation.

Long shot of the man as he leaves the room with the letter clutched in his hand and opens the front door.

Medium shot of man as he enters car in a hurry to drive to the girl's house. The car pulls out of the scene.

Close-up of man driving in the car with determination. Rock the car somewhat to give the effect of travel. Fade out at this point.

Fade-in to the girl in her house as she arranges a vase of flowers on the piano or table. The vase should be sufficiently large to be used as a weapon.

Long shot of the girl as she sits at the piano to play. Cut to a semi long shot showing the girl playing the piano as she faces the camera. She suddenly looks up in surprise as she sees the man enter the door. She smiles rises to meet him.

Medium shot of the man as he advances toward her. His rage is very evident on his face.

Long shot of man and girl meeting, but he angrily pushes her back. The girl turns her back to him as he flaunts the letter at her.

Close-up of man's face as he talks to the girl and works himself into a temper.

Medium shot of man as he turns the girl around to face him by pulling her arm.

Close-up of man's hand reaching for the vase of flowers and picks it up.

Extreme close-up of girl's face as she covers her face with both hands. This shot should only be a flash and have a length of 4 or 5 frames only.

Close-up of man's arm as it appears to strike blows on the girl's head with the vase.

Long shot of the man and girl at the instant when she slumps to the floor. Her face is terribly bruised.

Medium shot of man as he bends over the girl and realizes that she is dead. He looks at the girl.

Close-up of girl's face. Blood trickles from a cut in her forehead and from her mouth, her eyes remain open and motionless. The blood can be made with chocolate syrup placed on the face before starting if you are using panchromatic film, or a heavy red syrup for Kodachrome.

Medium shot of man from another angle as he stands and backs away from the girl. He slowly leaves her house with a horrified expression. As he closes the door, the scene fades out slowly.

Fade-in to two radio police officers sitting in their car intently listening to their police radio call. They look at

each other as they take their message.

Close-up of the police siren whirling.

Close-up of the police officers as they ride. One officer checks over his gun.

Close-up of a door with a number on it similar to a hotel room.

Long shot of the man sitting at a small table, reading newspapers, smoking cigarettes and drinking. He is unshaven, having been in the hotel room hideout for days. A large bottle of whiskey sits on the table. He rubs his hand through his disheveled hair.

Close-up of the man's face, as he holds his head in his hands and is in a horrible mental state. He drinks from the whiskey glass and smokes nervously.

Close-up of ashtray and empty bottle on the table as the man's hand snuffs out the cigarette. The ashtray is filled with burnt cigarettes.

Close-up of the police car siren whirling.

Long shot of the man as he looks out of the side of the drawn window shade. He picks up the newspaper to read again.

Close-up of the police riding in the police car.

Extreme close-up of the man's face as he continues to register fear and anxiety. This shot should run for one minute as it is to be used for double exposure work. This may be accomplished by carefully winding the camera as it is running. Time the scene exactly 60 seconds with a watch and film it at the beginning of a new roll of film so that you may rethread it in the camera at the exact spot for double exposure work. After you have taken the scene continue filming the balance of the scenario and I will tell you of the double exposing later in this article.

Extreme close-up of the siren as it stops whirling.

Extreme close-up of man's face as he lights another cigarette. After he lights it, he quickly turns his head in the direction of the hotel room door, with extreme fear, as he hears footsteps outside.

Long shot of the officers approaching the door with the room number on it. They stop at the door with drawn guns, and knock.

Medium shot of the man as he draws a gun and aims toward the door. He realizes that he is cornered and slowly raises the gun to his head.

Medium shot of the officers as they quickly enter the room and look toward the table.

Medium shot of the man as he lies on the table with a gunshot wound in his temple. Here is where the chocolate syrup comes in handy again.

Close-up of the man's hand with the gun still smoking. Fade-out.

In the long close-up shot of the man's face in which you are to double expose other shots, rethread the camera with the film on which this scene was taken. You have 60 minutes of scene in which

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BEFORE AND AFTER



It takes the concentrated effort of many people to prepare even an intimate scene for the movies. For the players there's no such thing as privacy. Above we see Joan Fontaine and Nigel Bruce rehearse a scene for Paramount's "Frenchman's Creek". All around them are the various members of the crew, and the scene looks like a crowd.



But after the rehearsal Miss Fontaine and Mr. Bruce play the scene, and seem to be all alone on a headland above the sea. But they aren't alone—twenty-five persons behind the camera are looking at them.

1944 Red Cross Fund Needs Your Help

WHEN bombs fall there is no time to send help half way around the world. When a badly wounded fighting man needs a transfusion, it is too late to begin looking for a blood donor or find a nurse to care for him. When a lonely soldier learns of trouble at home, he needs help—immediately.

The American Red Cross provides that help wherever and whenever the need arises. A continuous procession of blood donors must be maintained, nurses must be recruited for the Army and Navy, trained Red Cross workers and supplies must be sent to camps, hospitals and foreign theaters of operation the world over.

When a train crash leaves scores injured, when flood engulfs a town, when epidemic strikes, delay may cost lives. Red Cross disaster relief and medical supplies, held in readiness for such emergencies, plus trained workers to rescue and assist victims and help in their rehabilitation, will prevent delay and thus save many lives.

To fulfill its many obligations to the armed forces and our people, the American Red Cross needs your help. During 1944 it must supply some 5,000,000 blood donations. Each month 2,500 nurses must be recruited for the Army and Navy. Red Cross field directors and other trained personnel must be stationed at military and naval posts and hospitals to help our fighting men and their families when personal trouble brews, a task in which the Red Cross chapter on the home front ably does its share.

At home the Red Cross must continue a state of alert. Disasters must be met as they occur. Nurse's aides and first aiders must be trained and other educational projects continued. Food parcels for distribution to prisoners of war must be packed, surgical dressings made and the thousands and one details of administering a far-flung, busy organization must be attended.

All activities of the American Red Cross are financed by voluntary gifts and contributions. During March, designated by President Roosevelt as Red Cross Month, the American Red Cross must raise its 1944 War Fund of unprecedented size to meet unprecedented needs. Your contribution will assure maintenance of all Red Cross services and thus indirectly help save many a life. Let's give!

Televish Theatre For Keys

Streamlined television theatres, with every conceivable gadget, will spring up in key cities shortly after the war, according to belief held by technical experts, trade engineers and others familiar with latest developments in the tele field. Houses will spotlight their television setups for principal draw but bulk of performance will be motion pictures produced, as usual, in Hollywood.

The Post-War Visual Education Potentialities In Latin America

By NATHAN D. GOLDEN

Chief Motion Picture Unit
Division of Industrial Economy

THE Latin American market will have tremendous sales potentialities for American 16mm. motion picture sound equipment and films of a pedagogic type in the post-war period. The retarding factor for the present is insufficient funds to properly equip the schools of Latin America with visual education equipment. The program of showing educational films now being carried on by the Office of the Coordinator of Inter-American Affairs in Latin American countries is doing more to develop the use of motion pictures in teaching, than any medium yet devised. This agency, with its 113 16mm. projectors and its 69 mobile trucks and films is bringing home to educators and civilians in the remotest regions of Latin America the effective teacher the motion picture can be when used for that purpose. It is introducing American-made equipment in markets in which it has never been before. It will be those who have seen these films and equipment that will urge their government and school systems to provide the necessary funds to give to the children of Latin America this improved method of learning by visual education.

American visual education libraries too will find a waiting market when these funds become available. Films will naturally have to be in the language of the country to have their greatest value. Many Governments such as Brazil, Chile, Colombia, El Salvador, Peru and Venezuela are sponsoring the use of visual education via motion pictures. But here too there are but limited funds available for this development.

When compared with the visual education development in the United States, where some 28,800 (12,000 silent) 16mm. projectors are available in the schools and colleges for teaching purposes, one finds that a country like Chile has but 10 schools which have sound 16mm. projectors and not more than 60 such projectors are located in the entire country. That in Argentina there are several thousand silent 16mm. projectors but very few are with sound. That a country as large as Brazil has 1800 silent and approximately 100 16mm. sound projectors owned by the Government for school use. That in countries like Costa Rica, Cuba, Dominican Republic, Ecuador, Honduras, Mexico, Nicaragua, Panama, Paraguay, and Uruguay none of its schools have any equipment for the showing of educa-

tional films. On the other hand the Ministry of education in Colombia supplies equipment and films to all private and official schools, having 44 16mm. sound and silent projectors available. In El Salvadorian schools only 7 schools use films, in Guatemala only two, and a like number in Haiti have 16mm. sound projectors. In Peru the Ministry of Education maintains a film library and has encouraged visual education in its schools and colleges, but only 7 sound 16mm. projectors and 400 silent projectors are available in all of Peru. How many of these are the property of the ministry is not known.

Only one school of learning, the University of Montevideo, uses motion pictures for instructional purposes. The Ministry of National Education instituted a program for the showing of educational films several years ago, but due to the lack of funds the program has never attained any substantial development. Twelve 16mm. sound projectors are made available to these schools interested. Educational institutions are visual-education-minded, but here again present funds retard this development.

The following resume by countries gives a thumbnail sketch of the dearth of equipment available in the schools of Latin America and should afford American equipment manufacturers and pedagogic film producers a basis for the development of markets after the war in this untapped region.

Argentina

There were no worthwhile developments in the production of educational or commercial films during 1942. In fact, no great interest seems to be attached to the development of this type of production, for one reason perhaps because profitable distribution is out of the question, but American film distributors in Argentina have expressed a desire to handle more American educational "shorts".

As regards visual education, very little if any progress was made during 1942, chiefly, it is supposed, because of the lack of funds of the Federal and Provincial Governments with which to finance the official and unofficial projects on the subject. It is unquestioned that visual education has potentialities in relation to the vast improvement registered in Argentine educational facili-

ties in general, but this step is probably for post-war consideration.

There are no available statistics for teaching purposes nor of the number of these institutions maintaining film libraries, but it is estimated in trade circles that there are in Argentina several thousand silent film projectors and several sound film projectors for 16mm. films. Some development was registered in the use of 35mm. projectors for use in conference rooms of the newer government and private buildings, and of the 16mm. projectors by some of the more energetic commercial firms, but it can hardly be said that Argentina is a ready market for any immediate development in this respect. A complete system for distributing 16mm. films has been set up by the *United States Co-ordination Committee for Argentina* and it is being gradually put into effect for the distribution of American "shorts" which are being shipped by governmental agencies from the United States. The very short commercial films, which are used for advertising purposes in regular shows and which are exhibited in most of the cinemas in the key cities and many of the cinemas in the remainder of the country, showed considerable development during 1942 as regards quality, this being attributed to the ingenuity of European refugees, and who seem to have studiously applied the more modern ideas in this connection gained from experience in the film production industries of Central Europe.

The *Archivo Grafico* of the Argentine Government has set up a film library to which all Argentine producers have been asked to send a copy each of their films. "Archivo Grafico" has also accepted films from American company representatives and appears to be interested in cooperating in the distribution of 16mm. films.

Bolivia

So far as is known the American Institute (in La Paz and in Cochabamba) is equipped with equipment for showing educational films and this institution has both 16mm. and 35mm. silent projectors. It is not believed that there is a market for films, however, since the Institute has no funds for this purpose and has so far used only those educational films which it has been able to obtain from the United States Government for free exhibitions.

Brazil

Approximately 1,900 projectors of the 16mm. size are in operation in schools and public buildings, of which not more than 100 are equipped with sound devices. Most of these projectors are owned and operated by the Government in public schools. Though statistics are not available, it is believed that their distribution by districts follows more or less proportionately the outline for motion picture theater equipment, the larger number being operated in the central and southern districts of the country.

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Aces of the Camera

(Continued from Page 46)

the strong and husky Len Smith would make a good assistant cameraman. You had to be strong to be an assistant cameraman in those days. Vitagraph used a great, box-like camera that simultaneously made two negatives; one for the domestic release and one for foreign. It was heavy and cumbersome and was mounted on a heavy, wooden tripod. The main job of the assistant was carrying it around. And there was plenty of that to do because the camera had only one lens, and every time the story called for a closer shot the whole business had to be moved. Len remembers how they would go out on location, find just the "right" spot on top of a hill, and call to him to bring up the camera. Then, when Len thought they were all set, they'd change their minds and the new assistant would have to cart the stuff down that hill again and up another one.

Len doesn't remember the name of that first picture to which he lent his efforts as assistant cameraman. But he does remember that William Gas-kill was the director, Rex Ingram the assistant director and Helen Gardner the star.

After eleven months of being an assistant, Len was made a full-blown cameraman. The first picture he shot was directed by Harry Davenport and starred Tony Moreno. He was doing all right. Then Len, and another cameraman by the name of Nicklous, got an assignment to film the first feature picture ever made in America. It was titled "The Battlecry of Peace", starred Paul Scardan, Norma Talmadge, Harry Morey and Anita Stewart, and was directed by Wilfred North and James Stuart Blackton. The picture had a running time of over two hours and played at the Criterion Theatre in New York for more than a year. Motion pictures had arrived, and so had Len Smith, cameraman.

Len has a lot of happy memories of his days at the old Vitagraph Studios. Everybody was wonderful, to hear Len tell it. And the company was wonderful to work for. Every Christmas, for instance, the employees received ten per cent of their year's salary as a bonus, as well as a Christmas basket, complete with turkey and trimmings, handed to them in a special ceremony by John Bunny and Flora Finch. Everyone had lots of fun, too. Especially Larry Semon. He indulged in the strenuous kind of fun. There were several companies working on the same lot at that time, and Larry's favorite gag was to break up the players during their most dramatically tense moments. He usually accomplished this by the most uninhibited methods. Either by lowering himself into the set on a rope, or, from a point of vantage in the scenery, by sloshing one of the principal thespians

in the face with a pie. Larry 'specially loved the pie gag. The head men had to do something about it. They thought it might be necessary to send Semon out to California. While they were thinking about it Semon convinced them—by pushing Maurice Costello, complete and dapper in evening clothes, into a pool in the middle of a picture.

So Len got to Hollywood on Larry Semon's push. He was sent along as cameraman.

In 1917, when the United States declared war, Len enlisted. Even the war must have looked like a cinch to Len after spending a year in Hollywood with Larry Semon.

Twenty-nine days after he enlisted Len was in France. He got back in September, 1919.

Back in Hollywood, Len returned to his job with Vitagraph. But after a while he left them for Educational Films where he worked with Norman Taurog. He has nothing but praise for Taurog and the others with whom he worked at that time. In fact that is one of the most impressive things about Len Smith. He quite evidently gets a big kick out of life, and he likes everybody. That's a pretty sound formula for success in life in any business.

His years with Educational are memorable for Len in the constant state of excitement and uncertainty that prevailed with Taurog and Lloyd Hamilton playing gags on one another, and trying to top each other's gag. Such as the time Hamilton fell asleep in an airplane, an old jennie, and awakened to find himself flying high over the ocean. On another occasion, during a snow sequence, Hamilton had to appear from inside an igloo. While he was in there Taurog had the entrance sealed up and wouldn't let Hamilton out till he had hollered "uncle". Then there was the time that Hamilton got a nice big sway-backed horse for Christmas.

It was during this period that Len Smith and Koney Koenekamp, both baseball bugs, formed their own team, the invincible Griffith Park Orioles, and won the city championship five years in a row.

In 1927 Len went to Metro-Goldwyn-Mayer. He has been there ever since. His first big picture with M-G-M was that studio's first musical, "The Broadway Melody", which still rates high as one of Hollywood's best.

He photographed the Buster Keaton series, the Marie Dressler series, the "Maisie" pictures, with Ann Sothorn, and the "Tarzans", and "The Mortal Storm". For the last three and a half years he has shot nothing but color.

The biggest adventure of Len's career was his location trip to Alaska and the Arctic Ocean to film "Eskimo", in 1933. Paul Vogel, A.S.C., was Len's assistant on that adventure. Bill Foxwell and Al Scheving, who had played tackle for U.S.C., went along too. Richard Rosson was the unit director.

It is difficult to describe the hardships and dangers that crew survived during the four and one-half months it took to get the whaling sequence. Most of the action took place in 18 foot boats, among icebergs in the Arctic Ocean and in the region of the Diomed Islands that lie between Alaska and Russian Siberia. From these small boats the whales were harpooned by hand, in the primitive manner. As soon as the harpoon struck, the whale would take off at a great rate, dragging the little boat with all the camera equipment in it, and generally end up by sounding under a convenient iceberg. Ten whales had to be harpooned to complete the sequence and not all of them friendly. It must be an uncomfortable feeling when 70 tons or more comes charging at you in a cockleshell of a boat.

Part of the sequence, when the boat had been brought up to the exhausted and dying whale, called for the stunt man to jump from the boat onto the back of the whale, run up to its head, and apply the *coup de grace* with a well-aimed harpoon to the brain.

At the last, psychological moment, the stunt man refused to do it. There they were in the middle of the Arctic Ocean, their precious whale brought to bay after months of trying, arduous work, with, perhaps, only minutes to spare before the whale was off again—and the stunt man failed them. It was then that Paul Vogel, A.S.C., did one of the bravest things ever recorded in or out of fiction. Realizing that all would be lost unless someone acted quickly, he grabbed the harpoon, leaped onto the monster's back, and delivered the death blow himself. In its death agony the whale spun in the water, around and around at a dizzy speed, its tail and fins thrashing about in death-dealing blows. Vogel was thrown into the icy water, miraculously escaped the flailing monster, and was pulled into the boat. The other boat was caught by the great fins and cut in two as though by a buzz saw. Miraculously again no one got more than a dunking.

As though icy seas, blizzards and mad whales were not enough, Len's party had another thing to worry them. If they were caught within the 3-mile limit of the Russian coast they faced incarceration in the Siberian salt mines. It was no joke. The United States and Russia did not recognize one another in those days and the Russians used persuasive methods to discourage trespassers. Hunter, the chief engineer on the ship chartered by the expedition, had spent two years in the mines, and he kept everyone alive to the reality.

The only trouble was that the whales didn't know about the Russian attitude and frequently led the crew well within the Russian 3-mile limit. When this happened, the mother ship, skippered by the late Louis L. Lane, past president of the San Francisco Pilots Association, would remain outside the limit

(Continued on Page 61)

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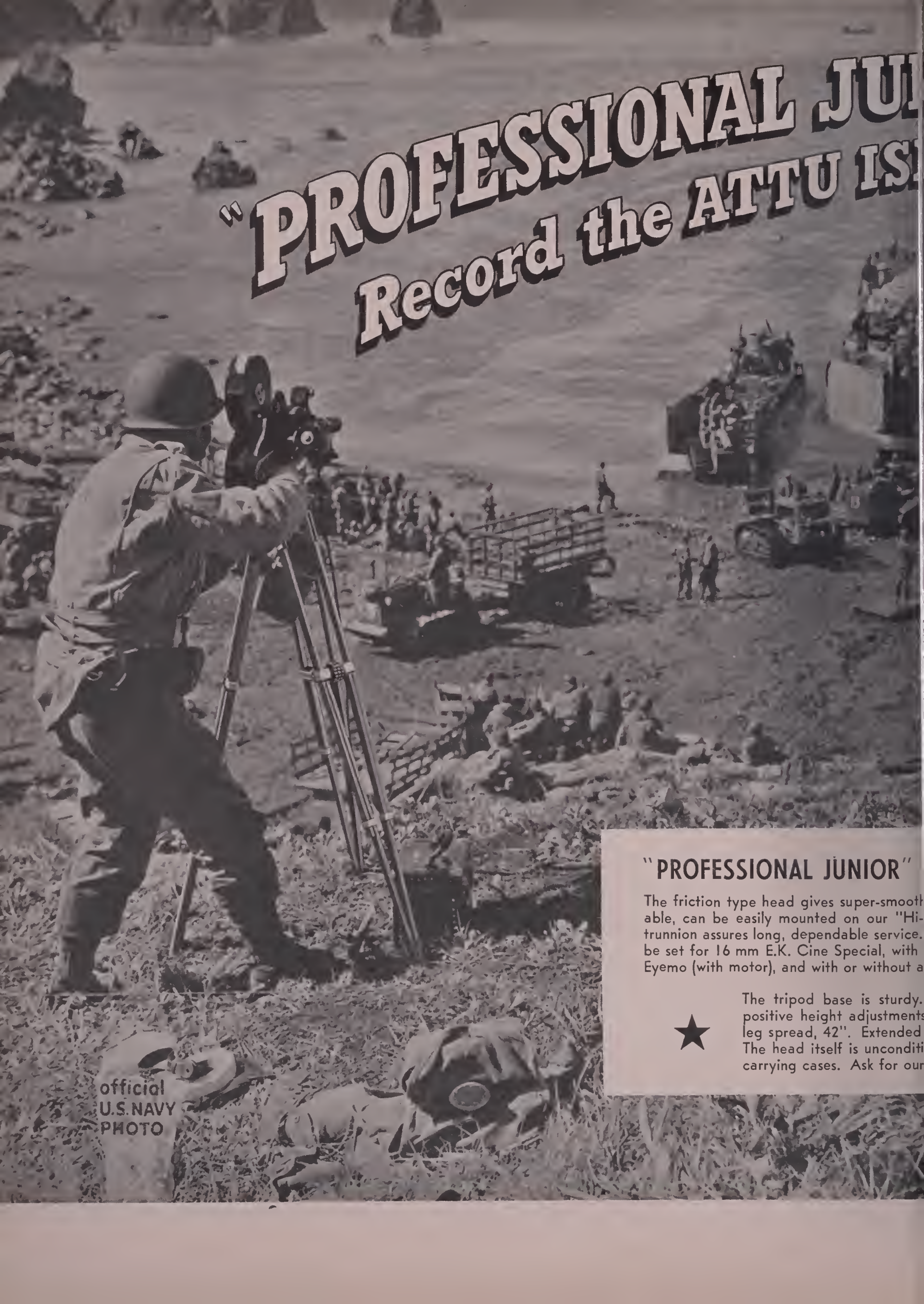
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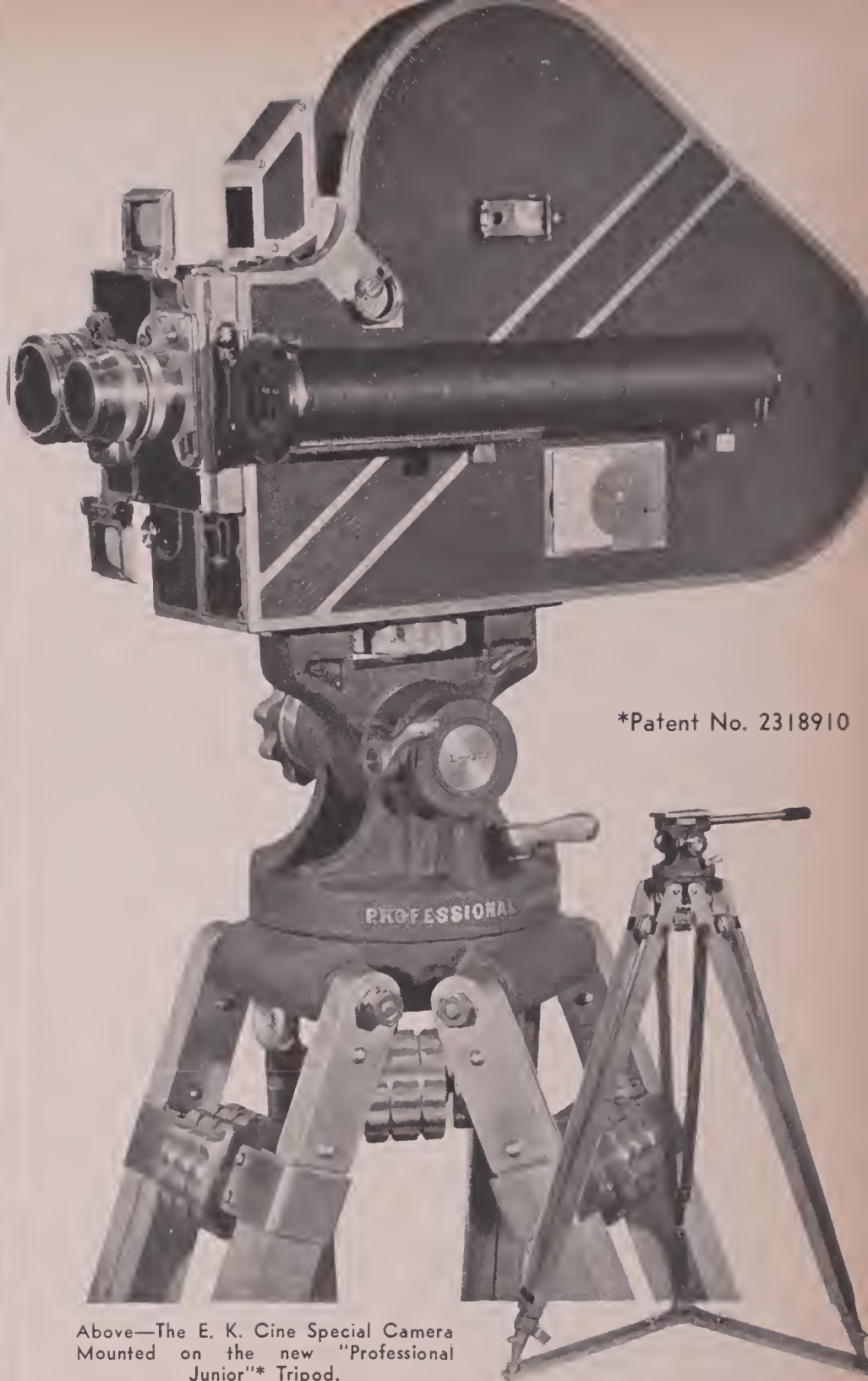


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and 80° tilt action. It is removable-base adaptor. The large pin and level is attached. The top-plate can motor; 35 mm DeVry and B & H gauge.



"1-leg" design affords utmost rigidity and quick, complete tripod weighs 14 lbs. Low height, at normal 2". All workmanship and materials are the finest. Guaranteed 5 years. Also available are heavy fibre



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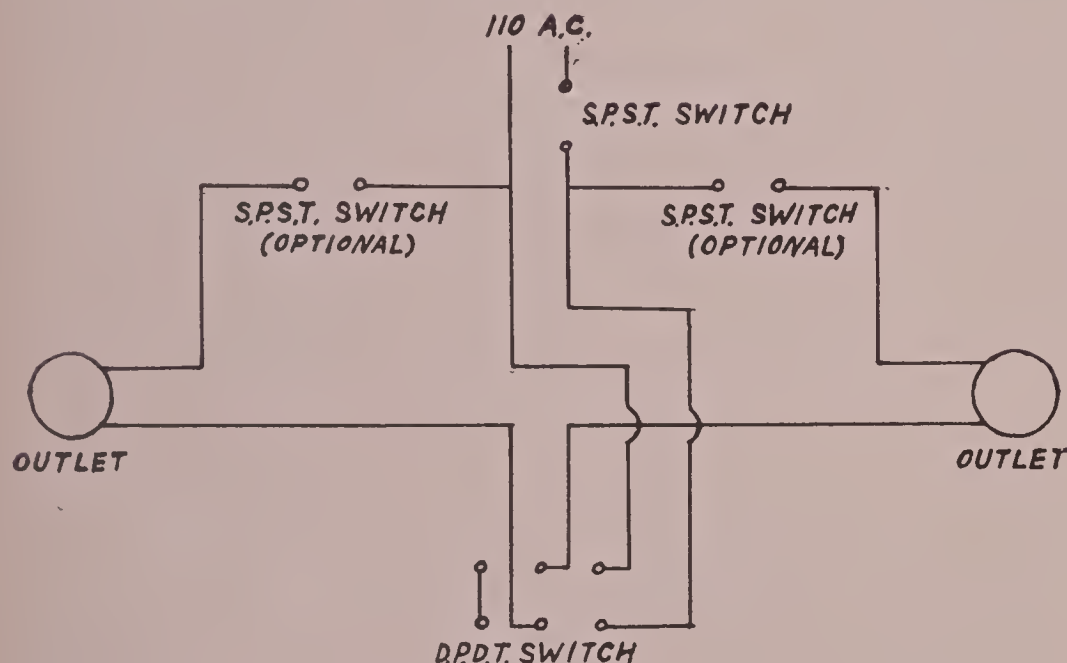
By JAMES R. OSWALD

THERE'S no need to burn your photoflood lamps at full brilliancy when focusing or adjusting the camera, when this home-made light dimmer wil not only make the job more pleasant, but will add considerably to the life of the photofloods. Built at a cost of around one dollar, a similar unit, when purchased ready-made, retails for five or six dollars. The parts are enclosed in a 3 x 5 inch wood index card file box (or equivalent box constructed of plywood), for the sake of appearance, although an ordinary flat board is satisfactory, if surface wiring is used. In addition to this, the following material is required:

- 1 Double pole, double throw toggle switch,
- 3 Single pole, single throw toggle



Above is the home-made dimmer. Below is the diagram describing the wiring.



switches (2 of which are optional),
2 Outlets.

1 6 ft. lamp cord with plug,

Several short lengths of lamp cord (or other heavy wire), for circuit wiring.

The switches may be procured from any radio, or electrical supply store. The outlets (baseboard receptacles), from the 5 and 10 cent store, where the lamp cord might also be purchased.

The wiring diagram is self-explanatory. Working on the "series-parallel" principle, the light dimmer does away with the need for a resistance, or rheostat. When the D.P.D.T. switch is thrown to the left, the photofloods are on dim, their brilliancy approximately equaling

a 60 watt lamp. With the switch thrown to the right, the lamp light to full brilliancy. The two S.P.S.T. switches (marked optional) are merely for controlling the photofloods independently, when on bright. If these switches are used, they both must be thrown to the "on" position in order to have the lamps light at all, when on "dim." This is necessary to complete the "series" circuit, in which the two photofloods must also be used, in order for either one to light.

The remaining S.P.S.T. switch is simply an "on" and "off" line switch to control the AC current for the entire box.

You'll find this useful accessory a

great aid to photographer and model, both in easing eye strain and in conserving photoflood lamps as well.

Post-War Visual Education Potentialities

(Continued from Page 51)

British Guiana

Various kinds and sizes of projection apparatus are used in the local theaters. The first class houses use American equipment. Government institutions are using American portables. Schools and public buildings are not equipped with projection apparatus. The Georgetown Consular District has recently been supplied with a portable American 16mm. sound projector, with which it contemplates showing non-theatrical films to schools, the Y.M.C.A., 4-H Clubs, etc., in Georgetown and vicinity.

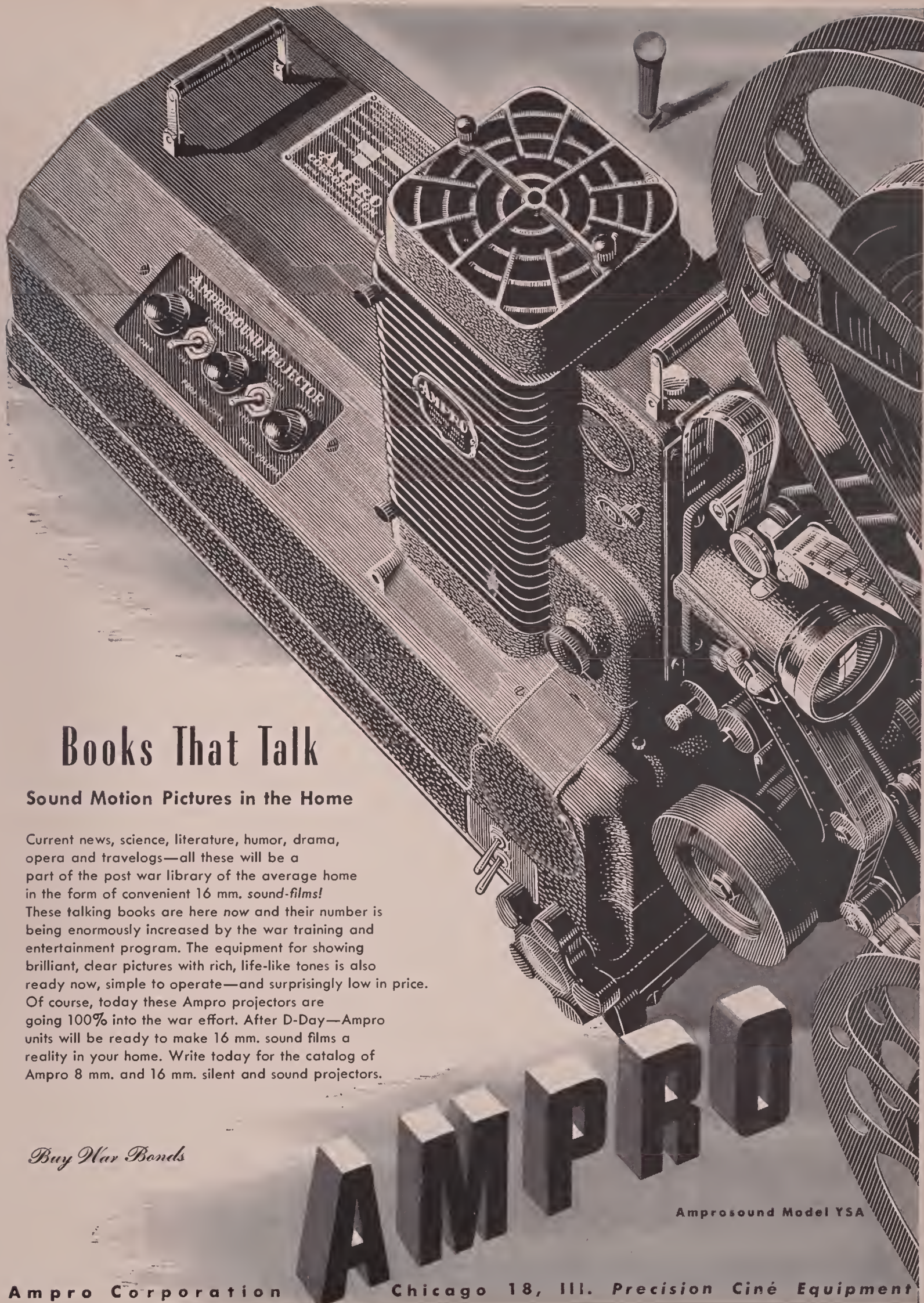
Chile

The Institute of Educational Cinematography maintains a film library of some 172 silent films and 68 sound films, most of which are of the 16mm. size, plus 17 educational features of normal theater size. These films are exhibited throughout the country in schools, clubs, and other institutions. The Institute has been in existence over 10 years and most of its films are quite old, about 80 per cent having been bought from the United States, 10 per cent from England, and 10 per cent being local manufacture. The Chile-United States Cultural Institute has sponsored since February 1942 showings of educational films (which now include 53 short subjects) supplied by the Coordinator of Inter-American Affairs and by the Department of State. Over 300 exhibitions of these films to date have been given in Santiago, Valparaiso, and the surrounding district to specially selected audiences totaling over 100,000 persons.

Several Government agencies, as for example the Direccion General de Sanidad, the Caja de Seguro Obrero, etc., own projectors and a few use sound trucks to take educational films into outlying districts which are not otherwise reached by any motion pictures. The limited amount of materials so far available has prevented any rapid expansion in this program. Some commercial firms have used films for advertising but on a very small scale.

Educational institutions have not made any great use of films as a part of their teaching program. A lack of instruction in the use of such material, combined with the small number of films available, limits the possibility of employing this teaching medium to the same extent as in the United States. There are not more than 8 or 10 schools in Chile with sound projectors, although some have silent machines. None of these machines are used to any great extent due to the lack of material and the cost of renting films. There are no

(Continued on Page 58)



Books That Talk

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Current news, science, literature, humor, drama, opera and travelogs—all these will be a part of the post war library of the average home in the form of convenient 16 mm. sound-films! These talking books are here now and their number is being enormously increased by the war training and entertainment program. The equipment for showing brilliant, clear pictures with rich, life-like tones is also ready now, simple to operate—and surprisingly low in price. Of course, today these Ampro projectors are going 100% into the war effort. After D-Day—Ampro units will be ready to make 16 mm. sound films a reality in your home. Write today for the catalog of Ampro 8 mm. and 16 mm. silent and sound projectors.

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Post-War Visual Education Potentialities

(Continued from Page 56)

schools and colleges maintaining film libraries, the only libraries being those of the Institute of Educational Cinematography, the Chilean-United States Cultural Institute, the library belonging to a commercial firm, and miscellaneous smaller collections.

Most of the 35mm. projectors in use in Chile belong to commercial theaters. Of the estimated total of 380 35mm. projectors in the country probably not more than 10 projectors are to be found in schools or other educational institutions. As far as 16mm. projectors are concerned, it is estimated that, including those that are privately owned, there are some 60 sound machines in Chile and about 350 silent projectors. No exact figures are available as to the number of 8mm. projectors in use, but it is estimated that there are approximately 600 in Chile.

The number of schools maintaining slide film libraries in Chile is not definitely known, but it is believed to exceed 15 or 20. Apart from the film library maintained by the Institute of Educational Cinematography the only Government organization which is known to maintain a library is the Direccion de Sanidad, which has a small library of health films.

As far as prospects of selling films and equipment to educational institutions are concerned, it is believed that in the post-war period there may be a fair market for educational films and projectors.

Columbia

The educational campaign by means of the exhibition of motion picture films started with the inauguration of the "Cultural Theater" in 1934, but it was only since 1939 that this campaign really had any practical activity. The free exhibition of motion picture films in the "Cultural Theater" at the National Park "Claya Herrera" was complemented in 1940 by the "Ambulant Schools" for that exhibition of cultural motion pictures in the different districts of the city of Bogota, and through the different municipalities within the country.

These "Ambulant Schools" operated under the direction of the Ministry of National Education until February 1942, when they were transferred and placed under the control of the "Directors of Departmental Education" and handed over to the Departments of Atlantico, Bolivar, Caldas, Cauca, Magdalena, Santander, Tolima, Valle, and to the Municipality of Bogota.

The acquisition and purchase of the equipment and trucks for the "Ambulant Schools" were obtained through the economical cooperation of various public and private institutions, which contrib-

uted to the financing of same in the amount of 51,500.00 pesos. With this money it was possible to equip nine "Ambulant Schools", giving service of motion pictures, records, and library. During the first trip undertaken by six of these schools and covering a period of 80 days, they were able to visit 229 municipalities, making exhibitions to 413,891 spectators. During the second, they visited 195 municipalities, presenting 1,778 exhibitions to 460,596 spectators.

The educational institutions are especially interested in the development of these educational campaigns, and due to the cooperation given by the Ministry of Education, which is supplying equipment and motion pictures, there has been a great increase in the exhibition and cultural motion pictures in all private and official schools and in all these institutions which look forward to a better education for the people. More or less from 20 to 30 private institutions and schools, besides all the public schools, educational departments and official schools, are making use of motion picture material, supplied by the Ministry of National Education, as a complement to the educational campaign in favor of a better culture for scholars. Practically no school or college has any educational film equipment and the greatest majority uses the motion picture films supplied free of charge by the Ministry of Education. There are 24 35mm. projectors in use in educational institutions in Colombia and 44 16mm. sound and silent projectors available.

Slide-films Used by Schools

There are some private and official colleges in addition to other institutions, such as Liceo Nacional Femenino (Bogota), Biblioteca Nacional (Bogota), Instituto de la Salle (Bogota), using slide-films as a complement to some of their school classes such as: Botany, Zoology, Art History, Geography and Universal History, et cetera. (With the exception of the equipment used and owned by the Instituto de la Salle, the rest of the equipment is owned by the Ministry of National Education.) There are no schools maintaining slide-film libraries, and only a limited number of the above mentioned schools possess small quantities of slides.

Film Libraries Maintained by Government Educational Officers:

The Ministry of National Education has an approximate stock of 450 films, of which there are 343 in the "Cultural Theater" warehouse and the rest is at the schools and other institutions. Of this stock, there are only about 250 films (35mm. and 16mm.) that can be used—the rest are worn and are useless. These films are distributed for exhibition purposes among the schools, upon request made to the Ministry of Education. The exhibitions are free, and the Ministry supplies the projecting equipment and the operator if necessary.

Government production of Educational Films:

The Ministry of National Education did everything possible in order to be able to produce educational films, installing laboratory equipment, et cetera. During the years of 1939, 1940, and 1941 the Ministry worked on the production of films.

Costa Rica

No educational films proper, except the ones exhibited at the Raventos theater for school children, have been shown in schools in Costa Rica. There is no 16mm. equipment available at schools, except an old silent projector at the Escuela Normal de Heredia, which is never used, and no plans are contemplated as far as it is known for adopting this medium of education. There is no market for the sale of educational motion picture films and equipment.

Cuba

One firm exists in Habana which has made a considerable investment in a laboratory and projectors to exhibit 16mm. educational and commercial films. This is the Peliculas Educativas, S.A. The firm maintains six sound projectors and three silent ones and has received a few of the films produced by agencies of the United States Government.

The Institucion Hispano-Cubano de Cultura is taking a leading part in collaborating with the Peliculas Educativas, and the *Compania Industrial Cinematografica de la Habana, S.A.*, of Trocadero 9, Habana, is making films for distribution in Cuba, most of them circulated with the aid of the Peliculas Educativas.

Zenith Films, S.A., 215 Consulado, Habana, is another firm which has devoted much effort to circulate 16mm. educational films. This concern obtained several films from England, but the last shipment was lost at sea.

Both of these concerns have expressed great interest in the 16mm. films produced by agencies of the United States Government, particularly in the four sound films in the Spanish language produced by the Department of Agriculture.

The 35mm. British propaganda films are distributed for the most part through one of the major American distributors in Habana, and are showing in practically all of the theaters which exhibit daily. The American films are distributed through a Coordination Committee, and are shown mostly in the various clubs, social organizations, and in projection rooms of private individuals. Their circulation is far below that of the British Government films.

Educational institutions are hampered in the use of educational films by lack of funds. Also the difficulty in obtaining Spanish-version pictures, or Spanish sub-titles in the American sound films of 16mm. have worked against a wide circulation. Price, too, is a drawback. Local agencies distributing films

(Continued on Page 62)

BETTER THAN EVER

The high quality and exceptional uniformity of Eastman motion picture films not only have been maintained, but have been improved under the tremendous pressure of wartime production—a real triumph of precision manufacturing. Eastman Kodak Company, Rochester, N. Y.

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EASTMAN FILMS

AMONG THE MOVIE CLUBS

8/16 Movie Makers

The 8/16 Movie Makers of Orange County, California, installed its new officers at the January meeting. New officers are: Harold Rider, President; Earl Cowan, Vice-president; Loren Finley, Secretary-Treasurer; Corp. Hugh Hicks, Program Chairman; Harold Hams, Assistant Program Chairman, and Mr. and Mrs. Whitsett, In Charge of Publicity.

Following installation of officers, the members enjoyed seeing "Beyond Manila," a three-reel picture in color, which received much applause. Also screened was a General Motors film, "The Duck," a film of the new army truck-boat combination. At the February meeting the annual picture contest will hold the spotlight.

St. Louis Club

Reports from the Amateur Motion Picture Club of St. Louis indicate its first New Year's Gala Show, held at the Hotel Jefferson, was a great success. Highlighting the program were Will Lindhorst, famous magician; "The Aristocrats," one of the most noted male quartettes in America; and the war film, "Battle for Britain."

Minneapolis Cine Club

Lee Cornell's Boy Scout film, which has been shown all over the United States, was the feature of the January meeting of the Minneapolis Cine Club. Also, there was a practical demonstration, with actual titles made and photographed on the spot. Next followed a showing of a medical film.

The club has appointed a Film Project Committee with Art Schwartz as chairman. Others on the committee are "Turk" Hopkins, Dan Billman, Doc. Profitt and Ray Rieschl.

San Francisco Club

Leaders of the San Francisco Cinema Club should be congratulated for setting up a Technical Service Committee of real experts to assist members in their technical problems. Club members are advised to consult this committee before experimenting, and thus avoid waste of precious film and effort. The members of the committee are Rudy Arfsten, Chairman; Jesse Richardson, Vice-chairman; Dr. Allyn Thatcher and John Smurr.

The January meeting of the club was held at the Women's City Club. Two films were screened: "Lake Tahoe," 1200 feet of Kodachrome by Leon Gagne, and "Autumn in Yosemite," also in Kodachrome, by President Lou Perrin.

Philadelphia Cinema Club

Four films, including two prize winners, was the film fare of the Philadelphia Cinema Club at its January meeting. The two prize-winners were both photographed by A. L. O. Rasch, and were "The Big Show" and "Idle Days." The other films were "Niagara Falls," by Mr. Kenneck, and "Vacation," by Mr. Coles.

M.M.P.C.

The January meeting of the Metropolitan Motion Picture Club was devoted to a novice contest. Seventeen films were entered in the contest which was judged by the audience. We are sorry to say that the club secretary did not get the names of the winners to us in time to publish in this issue.

Get Your Club News In

We are more than pleased to print news of the various cinema clubs in the Cinematographer. However, it seems that club secretaries and publicity committees forget that magazines have deadlines. For news to appear in the Cinematographer it must reach our office not later than the 17th of the month. By that we mean it must be here by the 17th of February to appear in the March issue. Won't you secretaries and publicists please mark that down and then send your news along.—THE EDITOR.

Los Angeles 8mm Club

Five pictures of the 1943 contest were screened at the January meeting of the Los Angeles 8mm Club. They were "Memories Are Not Rationed," by Claude Cadarette; "Tonopah, Nevada," by Gertrude Millar; "Vacation Reflection," by Milton Armstrong; "V for Vacation," by Bill Wade, and "The Magic Carpet," by Leon Sprague.

The New York Eight

"Fire From the Skies," the famous 1942 Best Ten Winner made by the Long Beach Cinema Club, and "Behind the Scenes," by Mildred Caldwell of the same club, were the features of the January meeting of the New York Eight. Victor Ancona gave an illustrated talk on composition.

Film Review

Review of film submitted by C. W. Wade, or North Hollywood, Calif. 200 ft. 8mm Kodachrome—entitled, "V—For Vacation."

This film was probably made for a contest in his club, and is an excellent example of a genuine "home movie." The man and wife wish they could go somewhere, but spend their vacation

at home instead, working in the yard, canning fruits, etc.

The scenes are well edited throughout, and assembled in logical continuity. Double exposed main and subtitles are expertly handled, probably with the assistance of a wind-back attachment. The titles are nicely hand lettered in a legible white, large enough letters, well worded and centered, and not too long. The uniform sub-titles are cleverly double-exposed over a Liberty bell in low key against a dark background, and these sub-titles are adeptly cut in.

Exposures are uniformly good, composition of the scenes is pleasing, and the camera angles are varied and well chosen. An effective use is made of "background action," showing mother busily working in the background of several scenes, as man or wife are featured in the foreground.

The simple but interesting and topical story shows the couple resting in the backyard, wishing they could take a trip. But they decide to be patriotic and stay at home for their vacation. The wife starts to rake up leaves and gathers walnuts, but husband pitches golf balls until one strikes her on the leg. She insists that he get to work, so he tries to pitch walnuts into a box. He misses the box, of course, then she shows him how, with a bulls-eye every time. Cutting is particularly well handled in the sequence. Then they both shell walnuts and pack them into jars. A sequence in the kitchen, showing canning of fruits is well lighted, and continuity expertly edited. Outside again, the husband takes a ladder and climbs up on the roof, to sweep off the leaves, which is a familiar chore to anyone blessed and annoyed by walnut trees.

She tells him to stop loafing on the roof and come down and help her. He comes down but uses a clever gag of going out into the yard to work, carrying the garden tools in his golf bag. He rakes leaves for awhile then leans on his rake, apparently dreaming about something. Here, and elsewhere, he makes good use of a chemical fade, and dreams of some previous vacations, inserting a few good scenes of trips taken.

After the dream of other vacations, they sit down again, but recall there is one thing they have not done, which

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Aces of the Camera

(Continued from Page 52)

and keep a lookout for the Russian gunboat that patrolled those waters. If the gunboat were sighted a special signal flag was to be run up.

One day the whale that Len's boat had bagged pulled them right up onto the Siberian beach. Inasmuch as the script called for a sequence of a beached whale being cut up for food and blubber in the approved Eskimo manner, the crew went ahead, and Len set up his camera.

Suddenly the agreed signal was hoisted on the mother ship. Everyone scrambled for the boats and pulled out. The ship, instead of staying outside the limit, came in to get them; radioing, meanwhile, to the nearest U. S. Coast Guard cutter. The cutter told them it could do nothing to help if they were in the 3-mile limit. They would have to help themselves. Well, they just made it. Aboard the ship, with the auxiliary motor contributing its three knots, and all sails set for a full speed of 12 knots, they were three and a half miles out when the Russian gunboat overtook them. He circled about them, while everyone held their breaths, then went away.

Len laughs when he talks about that incident. He said it usually took 45 minutes to get a full spread of sail on that boat, but the day that Russian gunboat hove in sight every stitch of canvas went up in less than 15 minutes. Maybe the chief engineer's stories hadn't been in vain.

Incidentally, the whale on the beach was too important to miss. So, Russian gunboat or no Russian gunboat, they went in every day for two weeks, cut up the whale and finished the sequence.

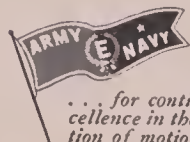
Len and his party were in Nome when Post and Gatty made their epochal flights over that region. And after Gatty crashed in Siberia it will be remembered that the Russians flew him out in a flying boat. The flying boat ran out of gas and crashed about five miles out. It was then Len's boat that towed them in.

Len Smith's greatest contribution to the industry has been his color pictures. His "Billy the Kid" won the second place Academy Award for color. His "Smilin' Through" was a contender the following year, and, had it been a better picture, would, in the opinion of many, have had a good chance for top Technicolor honors. From a photographer's standpoint, it was a daring picture.

This year Len enters the lists with "Lassie Come Home". The first feature, incidentally, ever shot on Monopack. It was a beautiful job.

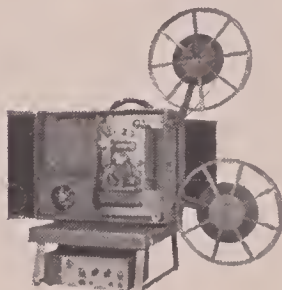


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Len may have hopes for the Academy Award but he doesn't express them. He hopes the war will soon be over so that all the boys, especially the A.S.C. boys, can come back. He hopes they know they have not been forgotten. He's very grateful to Fred Jackman and the A.S.C. board for the support they have given him during his term of presidency. And he means every word of it.

Here's to you, Len Smith. In the words of our Chinese friends, "May your shadow never be less."

Dance Short In Museum

The Rockefeller Museum of Modern Art has requested a print of Veloz and Yolanda's "Cavalcade of Modern Dance," made by Warners, because of its historic significance.

Coburn Credited

Robert Coburn, still photographer on Columbia's "Cover Girl," gets screen credit, due to fact his color photographs of 15 cover girls who appear in films are used as inserts in picture.

Post-War Visual Education Potentialities

(Continued from Page 58)

of this class protest that a price of \$50.00 per reel, with a \$30.00 royalty, is too high.

A few religious pictures were shown by Catholic schools and colleges, but aside from these, very few educational films were shown in schools. No schools or colleges at present maintain film libraries, although many of them want films. They buy occasionally from big American distributors.

Aside from the machines privately owned, whose operation does not involve the purchase or rent of films from distributors, there are believed to be between three and four hundred projectors for silent 16mm. film in operation. Of projectors for sound film, there are not more than about 30. This is naturally due to the absence of dubbed film of that size, or films with Spanish sub-titles. However, there are two concerns now equipped to dub films of this size, or to supply Spanish sub-titles. They are the Películas Educativas, S.A., and the *Laboratorio CHIC*, also of Habana.

Slide-films are used very little. A few private schools have made inquiries recently concerning slide-films on natural history. Language constitutes a problem. None of the schools maintains its own slide-film library. Ten schools in Habana now take film or slide-film service, and it was expected that with the beginning of the school year last September there would be nearly a hundred.

No film libraries are maintained by the Government Educational Office. However, through the cooperation of the distributors of educational films mentioned above, a conference of school inspectors from each province was held in Habana, and films were shown in an effort to secure a government subsidy for using films in schools. A project to get projectors in a number of schools by charging five cents per pupil failed in 1941.

Dominican Republic

As yet no motion picture films are used in education. However, an interest is being displayed in the field of visual education, but no film libraries are maintained by educational institutions. No 16mm. projectors are in public use in the Republic with the exception of a silent one owned by the *Compania Eléctrica* and one sound projector at present in possession of the Legation. There are a few 8mm. and 16mm. projectors in private use, but no definite estimate can be made of the number. Slide-films made by local photographers are used for advertising in theaters in company with the short subjects preceding the main feature. No schools have slide-film libraries. The Government does not produce educational films, nor are any commercial or educational films produced domestically. Commercial films are not used to any extent. Prospects for sell-

ing films or equipment to schools are not encouraging at present, but as conversations with educational leaders continue, it may be possible that the Government will begin to seek out film and equipment suppliers in order to begin development of this field.

Ecuador

The Ministry of Education has been entirely too restricted financially to be able to include the purchase of motion picture equipment and the showing of educational motion pictures in its program. Considerable interest has been shown, however, both by the public and private schools in educational films lent or exhibited through the courtesy of other groups, especially recently through the courtesy of the cultural officer of the American Embassy and the local Coordination Committee.

Ecuadoran educators are quite aware of the value of exhibiting and using educational motion picture films for pedagogical purposes and unanimously lament the financial stringency that makes impossible a greater employment of this educational medium. The Jesuit and Christian Brethren schools have silent equipment for showing films and show occasional ones of religious import, usually by the Papal Nuncio. The Military College has excellent 35mm. sound projection equipment of American manufacture.

The Military College is said to have a small film library, a present from the German legation, and has occasionally rented other films for showing to its students. A few schools are reported to have 16mm. projectors, but it has not been possible to secure any description or list of these.

Slide films are not used to any appreciable extent by schools in Ecuador and slide film libraries are negligible. No government educational office maintains a film library.

The government produces no educational films, although a propaganda film for use by the Tourist Bureau was ordered produced by the government some years ago. No educational or commercial films are produced domestically. A few commercial films are produced domestically. A few commercial films have been used for advertisement purposes in theaters, chiefly in Guayaquil and in neighborhood houses. The prospect for selling films or equipment to educational institutions is very poor owing to the very difficult financial situation of the Ministry of Education.

El Salvador

The Ministry of Public Education of the Republic of El Salvador has an educational film department which has charge of showings of pictures in all public schools of the Republic.

Seven schools use films for teaching purposes, and four schools maintain film libraries. No 35mm. projectors in use, but eight silent and one sound 16mm. projectors are in use. Slide-films are used by schools to a slight extent,

but very few schools maintain slide-film libraries. Film libraries are maintained by the Government Educational Office which produces some educational films, but not on a large scale.

There is at present very little market for the sale of equipment for the showing of educational films and the market for the films themselves is small as yet. This market will probably increase slowly during the next few years.

Guatemala

Although the Guatemalan Government has issued regulations lowering the duties on educational films, little has been done along the line of visual instruction in schools and colleges through the use of educational motion pictures. Lack of funds for public schools will undoubtedly prevent any such steps being taken in the immediate future, and private schools are not in a position to install such equipment. There seems to be, therefore, very little opportunity for developing this branch of motion picture distribution in Guatemala. Only two schools are known to have motion picture projectors, and their equipment is the standard 35mm. silent equipment. The schools are the Central High School for girls and the Cathedral School of the Archbishopric of Guatemala, and so far as can be ascertained, films are shown principally for entertainment.

The theaters use the standard 35mm. equipment and 34 of them have sound equipment. The local Coordinator of Inter-American Affairs has two portable 16mm. projectors with sound equipment and makes regular showings of educational films at all the schools. These showings have been very well received and have had considerable favorable comments from the authorities, press, and audiences.

According to local dealers in photographic supplies and equipment, approximately seventy-two 16mm. silent projectors have been sold here in the last ten years, and many of these are old models and not in use. All purchases have been made by individuals, and in view of the small number of persons who can afford this luxury, the market for this line is very limited. The market for 8mm silent equipment appears to be better, since there are more people who can afford the lower price of the film and equipment.

Haiti

Educational institutions in Haiti are but slightly interested in the use of films for teaching purposes. The Medical School in Port-au-Prince and Agricultural School at Damien are the only educational institutions using films at present. They have 16mm. sound and silent projectors, but limited budgetary allowance prevents purchase of films for the establishment of a library. United States Government films are borrowed from time to time and are very well received.

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Scenario for Interior Lighting

(Continued from Page 49)

to double expose the scenes of which the man is thinking. Allowing a few seconds at the beginning of the scene, fade-in a shot of the man bending over the girl's body and fade out. Allow a few seconds before fading in two consecutive shots of newspaper headlines reading to wit:

"Police probe girl's mystery death," and "Solution near in girl saying".

You can easily obtain headlines of this kind in newspapers in a short space of time. After fading these headlines in and out, allow another brief lapse and then fade-in a shot of a revolver, denoting the man's intention of suicide. After this last fade-out, the balance of the scene will carry on with the close-up of the man's face registering fear and anxiety. Then cap the camera lens and roll the balance of the film through the camera and remove for processing.

In this picture, the drama and suspense can be accentuated by the proper use of lighting effects. Black shadows and weird lighting employed in the hotel room sequence will greatly add to the effect on the audience. Take great care in the double exposure and don't let your actors emote too unnaturally in order to avoid any chance of placing a stigma of amateurism in the scenario.

Plan each shot and its action before shooting and ascertain if the lighting effects are what you desire.

This scenario is difficult and requires intense study and thought, but the results will repay your efforts. You can always get the co-operation of police officers when you explain that they will appear in a motion picture. I know, because I filmed this scenario and the officers want to appear in more pictures.

Film Review

(Continued from Page 60)



is to buy War Bonds—A War Bond poster is then shown, followed by a clever sequence that is evidence of the filming ingenuity of this producer. He is seen making out checks, then comes some expert double exposures of tanks, planes and guns against a dark background, as War Bonds float down. The climax comes when a Jap flag is burned up.

This is a well conceived and efficiently executed "home movie," completely titled, and should rate high among the top entries of any contest.

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FROM SCRIPT TO SCREEN

Bell & Howell Announces New Educational Films

A group of educational films produced and heretofore distributed by the University of California, will henceforth be rented and sold through the Bell & Howell Company Filmosound Library. Included in the group are some of the most significant school-made films, dealing with widely varying subject matter. The list includes:

Nursing—A Career of Service
No. X960 Silent Monochrome. 28 min. \$2.
No. CX960 Silent Color. 28 min. \$6.

Step by step progress of student nurse. Excellent for vocational and social studies.

Springboard Diving
No. 961. 10 min. \$1.50.

Champion mermaids demonstrate all the standard competition dives in normal and slow motion sequences.

Technique of Foil Fencing
No. X962 Silent. 15 min. \$1.

Expert instructors demonstrate classic movements of offense and defense. The

importance of poise, form and agility in this sport.

Making a Stained Glass Window
No. C963 Color Sound. 20 min. \$6.

A comprehensive and beautiful process film showing each step in the making of large stained glass windows, using American materials and craftsmanship.

The Horse in North America
No. C964 Color Sound. 20 min. \$6.

Paleontological research, fills in the natural history of the horse on the North American continent.

The American Horse
No. C965 Color Sound. 21 min. \$6.

Outstanding representatives of all leading breeds, their pedigrees and functions. Excellent complement to The Horse in North America.

'Saludos' In Swedish

Donald Duck and Jose Carioca are going Swedish in "Saludos Amigos." A complete Swedish adaptation of the Walt Disney Latin American musical feature has been made and dubbing started at the studio recently.

What It Takes to Be a Cameraman

(Continued from Page 48)

Every ace cameraman must, of course, be a sculptor; or, if you wish, a plastic surgeon. And though he works with lights and shadows instead of chisel or scalpel the results he is frequently called upon to achieve are no less remarkable—or artistic. Aging favorites continue to appeal largely because of this plastic skill of cameramen who are able to “hide” the blemishes that time or illness leaves on these favored faces no less than it does on ordinary mortals.

Finally, having achieved recognition for his work, a cameraman must guard against becoming too methodical; in the sense that his work becomes typed. Within the elastic framework of the fundamentals of his profession he must continue to experiment. The good cameraman is he who dares. Like all other creative work his will be better for spontaneity and nuance. He will be defeated in this objective if he is forced to turn out motion pictures on a mass-production method. No cameraman can go on endlessly from one picture to another without sacrificing something of the picture and of his professional self.

Post-War Visual Education Potentialities

(Continued from Page 62)

Honduras

The only commercial films known to be shown in Honduras are those exhibited by Sterling Products, International. This film uses mobile equipment which travels constantly throughout the Republic, giving exhibitions in many places where there are no regular movies.

There have been no development within the country along the lines of educational motion pictures, and none are distributed in the schools. The Coordination Committee for Honduras in cooperation with the Legation puts on shows three times weekly in Tegucigalpa using films furnished by the Coordinator of Inter-American Affairs. Most of these are of an educational nature.

Mexico

There is no production of educational or commercial films in Mexico. However, a certain number of educational films have been brought in by various industries operating in Mexico and a limited number have been distributed through the American Embassy by the Office of the Coordinator of Inter-American Affairs. For the most part, the educational films are 16mm. films and are usually not shown in the reg-

ular motion picture theaters, but are rather shown in clubs and recreation halls, as well as by sound trucks traveling through the country. Thus far the number has been very small but there appears to be considerable interest on the part of the public, particularly when no admission is charged, for travel films and features showing the development of the war industries in the United States.

Comparatively little development has taken place in Mexico in the screening of 16mm. motion pictures. So far as is known, only the new General Hospital has any 16mm. equipment. It is using it for teaching medical and operating technique. No other hospitals, churches, schools, colleges, prisons, or other institutions of the Government are so equipped. This is not due to lack of interest, as the Government has made inquiries from time to time but for one reason or another has not been able to obtain any equipment. Educational institutions are particularly interested in the medium but the Government cannot furnish them with the necessary equipment. It may be said, therefore, that there is a potential market in Mexico for educational motion picture services.

There are some 16mm. projectors, both silent and sound, in Mexico. *The American Photo Supply Company* and one or two others have sold up to 6 kodescopes or 16mm. sound projectors. This is said to be amateur type apparatus and the supply of cameras and projectors is running low. There are not more than 50 silent equipments of this type in the city. The *Cinematografica y Comercial de Mexico* has disposed of 16 sets in the past 5 years. Occasionally 16mm. apparatus is assembled locally on special order, but such equipment is of doubtful performance and there are but few in use and none on hand.

Nicaragua

There have been no developments in the showing of educational films in Nicaragua and no indication that educational institutions are contemplating the early use of such films for teaching purposes. There appear to be small immediate prospects for the sale of the 16mm. silent and sound projectors. There are relatively few projectors in the country and virtually all of them are privately owned.

Panama

It is estimated that there are about two hundred 16mm. projectors in Panama and that practically all of these are silent.

The Educational Film Program of the Office of the Coordinator of Inter-American Affairs involves the distribution to the twenty Republics of Latin America of selected 16mm. films on a wide range of subjects. These are shown to relatively small audiences in schools and public buildings. (In Panama the Embassy has given several such showings recently.) The Embassy suggested to the Coordinators Office some time ago that these educational shorts would

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reach a far greater audience in Panama (an estimated eighteen million a year) if the 16mm. films were "blown up" to the 35mm. size for presentation at regular motion picture theaters. Exhibitors would be only too glad to include them on their program.

The Embassy has three 16mm sound projectors which are used to show educational shorts in schools and public buildings under the Educational Film Program. In addition, *Kodak Panama, S. A.*, has a 16mm. sound projector which is loaned out to interested groups. All other 16mm. projectors are not equipped for sound, and are privately owned.

There are no projection apparatus in schools or public buildings.

Paraguay

Educational motion picture films are not in use. Educational institutions are thinking along these lines but nothing has been done so far. No schools or colleges use films for teaching purposes and film libraries are not being maintained. There is one 35mm. sound projector in use and about three 16mm. silent projectors in the schools of Paraguay. There are no slide-films used in the schools and the Government does not maintain film libraries nor does it produce films. Prospects for selling films or equipment to educational institutions are fair. They might be interested if they had an opportunity to see films which met their particular needs from both the subject and language standpoints.

Peru

There has been considerable development during the past two years in the showing of educational motion picture films. The Peruvian Government has created in the Ministerio de Educacion Publica a bureau known as the Direccion de Extension Cultural Artists, under which bureau is a section known as the Seccion Radio Fusion y Cine Educativo. This bureau has issued some propaganda pamphlets with a view to encourage visual education in Peruvian schools and colleges. This bureau has at its disposal a sound truck, employing a full time operator, which was presented to the Government by the International Petroleum Company. The Government, in cooperation with the office of the Coordinator of Inter-American Affairs, is now showing educational films in schools and colleges, clubs, and in the public squares of the principal provincial towns throughout the republic. The subject of employing motion pictures in schools instruction as an intricate part of its curriculum has been under discussion in Government circles for a number of years but no definite, permanent program under Government direction has materialized to date. There are no schools or colleges that maintain film libraries but the Coordinator's office will supply educational films upon request. It is estimated that there are about 400 35mm. sound projectors in use. As far as could be determined,

there are seven 16mm sound projectors in operation in Peru.

Silent 16mm. projectors are, with few exceptions, owned by private individuals. The number in service has been estimated to be about 400. Several mining companies, medical societies, and government departments have purchased 16mm. projectors for the purpose of showing educational, industrial, and professional films. The number of 8mm. projectors in use is estimated to be about 250. Slide-films are not used in Peruvian educational institutions. The only educational-commercial film made in Peru in recent years was one produced under the auspices of the International Petroleum Company of that company's organization in Talara. This film was produced by an American company.

Few educational and documentary films are publicly shown, but there has been a tendency for some of the larger American firms to accompany their sales campaign in this country with film presentations, and some progress has been made by the government in the use of educational films in institutions of higher learning in Peru. Most of such films are of American origin and have relatively little propaganda effect.

Uruguay

Considerable progress has been made in the showing of educational films. About four films are shown each year on 35mm. stock by the Seccion Cinematografia del Ministerio de Instruccion Publica, which has shown about 50 films since its establishment in 1922. About three films are shown per year on 16mm. stock by Seccion Cinematografia de Ensenanza Frimaria y Normal.

The University of Montevideo is the only institution of education which uses films for instructional purposes. These institutions do not maintain film libraries although small collections have been accumulated by the American Embassy and the British Legation. The Ministry of Public Instruction maintains a film library for motion picture films.

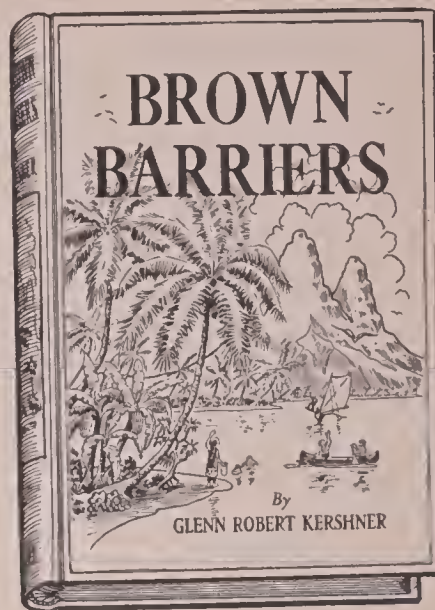
Educational institutions are interested in the showing and development of visual education. 16mm. projectors are used primarily in private homes. Very few standard-sized projectors are to be found in schools, public buildings, or other locations. It is estimated that there are 553 silent 16mm. projectors in Uruguay. There are 21 sound 16mm. projectors in Uruguay.

There is a potential market in Uruguay for the sale of motion picture equipment and films to the educational institutions in the country. Inquiry in this regard should be directed to the Ministerio de Instruccion Publica or to the University of Montevideo, or to the American Embassy.

Venezuela

The Venezuelan Ministry of National Education instituted a program for the showing of educational films in the schools several years ago, but due to

(Continued on Page 68)



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The Author of "BROWN BARRIERS" spent many years in the South Seas; long enough to know the natives and the islands intimately. He selected the inspiring island of Bora Bora, one of the Society Group, for the background of this intensely interesting and authentic travel novel.

It was here in 1856 that a small boatload of men and a lone woman, survivors from the wrecked clipper ship Norbert K., worked their way through the opening in the foaming reef to what destiny held in store for them—Love, laughter, hate and romance told in gripping dramatic style.

"Kershner is at his best in writing of the sea and of ships that go down to the sea. His account of a storm on the briny deep is the most realistic that this reviewer has read."—H. C. S., Ohio Arch. and His. Quarterly, Vol. 50—No. 4 (Oct.-Dec. 1941).

"The author weaves a tale so vivid that the reader paces holy-stoned decks, and tosses copper pennies with deck hands, praying for winds to fill empty sails."—Virginia Hall Trannett, Col. Eve. Dispatch, Columbus, Ohio.

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Experts Convene At Nela Park



TO devise a suitable 16mm. sound motion picture projector for military needs, thirty-five experts from the film industry and the armed forces held a 3-day meeting with General Electric engineers at GE's Nela Park, Cleveland, Jan. 11, 12, and 13.

It was the initial meeting of this newly established branch of the War Standards Committee on Photography and Cinematography.

Host to the group was Frank E. Carlson, illuminating engineer at Nela Park. Representatives hailed from various parts of the country: from the Army, Navy, and Marines; from leading makers of projector equipments and motion pictures; from film processing laboratories; from the Society of Motion Picture Engineers; and, from GE's Nela Park engineering division.

"At present, there just isn't any adequate 16mm. military projector to meet the special requirements of the armed forces to train, educate, and entertain

troops here and over-seas by way of the motion picture." So said Capt. Lloyd T. Goldsmith of the Army Signal Corps at the meeting.

Among manufacturers represented were these firms: Bausch and Lomb Optical Co.; Eastman Kodak; National Carbon; Bell & Howell; DeVry; RCA; Ansco; and Ampco.

Others from the armed forces were Lt. Gordon A. Chambers, USNR, Naval Air Station in Washington, and Lt. J. L. Lesser, USMCR. Serving as chairman was RCA's Production Manager A. G. Zimmerman, Indianapolis. Representing the Society of Motion Picture Engineers was D. E. Hyndman of Eastman Kodak. Secretary of the meeting was J. W. McNair, electrical engineer of the American Standards Association.

It is expected that the specifications drawn up at this first meeting of the industry division will be adopted at a subsequent meeting to be held in the near future.

A. W. Gelbke New Chief Engineer for E. Leitz, Inc.

According to an announcement by Charles E. Kidner, General Manager of E. Leitz, Inc., Arthur W. Gelbke has been appointed Chief Engineer of that firm. Gelbke has a long and impressive engineering record. He was formerly Director of Engineering for the American Type Founders, and in that capacity supervised engineering on contracts totaling about \$75,000,000. His background also includes service as Electrical Engineer in charge of the Department of Public Works of New York City, and the supervising and designing of many projects in South American countries.

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- ★ Auricon 16mm. sound-on-film recorders and cameras are serving the Nation's War effort with Military and Government Film Units, and with civilian organizations producing essential morale and industrial training films. If your work in such fields makes you eligible to purchase new equipment, we invite you to let our engineers show you how Auricon portability and professional performance will simplify your recording problems.

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RECORDING EQUIPMENT SINCE 1931**

Aquiring Balance in Color

(Continued from Page 47)

the fact that the red of the letters and the yellow of the background were both of the same value in depth of color. My friend had spent many hours assembling, shooting the titles and splicing them in their proper places but when projected on the screen, the colors merged making the title illegible. Not realizing the true cause of his mistake, he shot them again, thinking that his first exposure might have been wrong. The result was no better. If his back-

ground had been lighter thus giving greater contrast between the two colors, or, better still, had he used a more neutral hue, such as a grey, a legible and attractive title would have captivated the eye of his audience.

The complimentary color green could also be used successfully with red letters provided care is taken to select a green of high value and weak chroma.

A title using a deep red background with light yellow letters, shadowed in black, is very effective. I used this for a dramatic main title and the result was quite pleasing. The main and end titles for another picture were composed of a medium blue background with a yellow cutout and white metal letters; the white letters neutralized the brilliance of the opposing colors. The fundamental hues of the spectrum are not easily combined in titles or any other closeups that fill the screen unless a third color is added as a harmonizing medium. It is much safer to use subdued hues, or, as has been expressed, hues of weaker chroma.

Colors need not be bright; we have seen subdued tones and soft effects used advantageously in some very outstanding work. Through experimentation with color, many delightful effects can be obtained which will enrich our films. Titles will have greater appeal—they can be made to express the mood of the picture; and the film in general will take on the appearance of a finished product. Once we have become familiar with the principles of color harmony, new horizons will be open to us.

Try composing for color; large areas of pastel shades with small areas of bold color. Remember your simple color harmony; balance cold color against warm color, light shades against dark shades, small areas of strong color against large areas of weak color. It is not difficult as it first seems, and pays big dividends in the final result.

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The nation's two foremost screwball comics have done it again on a bigger scale! Marooned on a South Sea Island, they cram side-splitting fun, romance and adventure into a prize example of pure escapism. (Abbott and Costello, Virginia Bruce, Robert Paige). Available from February 7, 1944, for approved non-theatrical audiences.

Gateway North. Silent-Color. 15 min. Rental \$3.

Initial stages of new roadway through British Columbia toward Alaska. Three main stages of social progress side by side: hunting, agricultural, industrial. Breath-taking scenery, in gorgeous color. (Karl Robinson).

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Eastman Sponsors Campaign of U. S. Cadet Nurse Corps

In support of the campaign for 65,000 recruits to the U. S. Cadet Nurse Corps, Eastman Kodak Company is sponsoring a series of full-page advertisements in national magazines starting late in January and continuing through May.

The future in nursing is the theme of the series which will run in 15 magazines with an average monthly circulation of twelve million.

Prominently featured are Kodachrome (full color) reproductions of the Cadet Corps' outdoor uniform for winter wear, selected by a jury of New York fashion editors, from designs submitted by prominent New York stylists.

The urgency of the Nurse Corps campaign is indicated by a statement from Dr. Thomas Parran, surgeon general of the U. S. Public Health Service, who says: "There is a dangerous shortage of nurses today. With thousands called to service in the armed forces and civilian hospitals, war plants, clinics and public health centers, nurses in increasing numbers are needed at once."

In a letter to Thomas J. Hargrave, president of the Eastman Kodak Company, Dr. Parran writes, "The action of your company in devoting its energies to the task of recruiting nurses for the U. S. Cadet Nurse Corps is a distinct war service for which I am most grateful," while T. S. Repplier, general manager of the War Advertising Council, terms the series "one of the most outstanding examples to date of all-out support of a government program by a leading advertiser."

Lucile Petry, director of the division of nurse education of the Health Service, points out that the demand for graduate nurses will continue to grow even after the war, adding there has never been enough nurses to meet the demands.

The agency is the J. Walter Thompson Company.

War Worker Donates Tenth Pint of Blood!

Wilbur Chilson, Night Superintendent at the Rockwell plant of Bell & Howell Company, donated his tenth pint of blood this week to the Red Cross Mobile Unit stationed at Paul Revere Park. Mr. Chilson made his first contribution to the blood bank in April, 1942, and has since donated until his is an outstanding record of selfless giving. Although as many as 12 pints of blood have been donated by one person, Mr. Chilson's ten pints, that might mean the difference between life and death for men on our fighting fronts, were contributed in one year and eight months, and he's still going strong!

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ON GUARD



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now made
of material
developed
for a better
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FILM BASE IS A PLASTIC—one of the earliest. To make a better film, Kodak long ago began producing from cotton linters a "miracle material": cellulose acetate.

In the form of TENITE—made by Tennessee Eastman Corporation, a Kodak subsidiary—this plastic is tough as a steer's horn and lighter than wood. It can be molded under heat or pressure, or "machined" like lumber or metal. It can be clear transparent, or in an unlimited range of colors.

Tenite is molded into finished products at the fastest rate ever reached with plastics. It led to a minor "industrial revolution" before the war or wartime shortages were dreamed of . . .

Now it has more than a hundred war applications—not as a substitute, but as a superior material. As an extra advantage, it does supplant other "critical" materials.

A few war uses are illustrated . . . In a sense, they all started with photography—the ever-growing need for finer film . . . Eastman Kodak Company, Rochester, N. Y.

REMEMBER TORPEDO SQUADRON 8? . . . how, knowing exactly what the odds against them were, this heroic band of 30 Navy fliers drove unwaveringly into the massed fire of the Japanese fleet off Midway? And only one man survived? A stern example to us at home. BUY MORE WAR BONDS.

Doubles for brass—Before acceptance by the Army, this bugle—molded of Tenite—won the most critical ears by its tone and range.



He controls the Jeep with a Tenite steering wheel—strong, tough, and able to stand all climates. Your own car probably has a Tenite steering wheel, instrument panel, accessories.



His bayonet scabbard is Tenite—lighter, tougher, more easily cleaned . . . Cost is little more than half that of scabbards made with earlier materials.

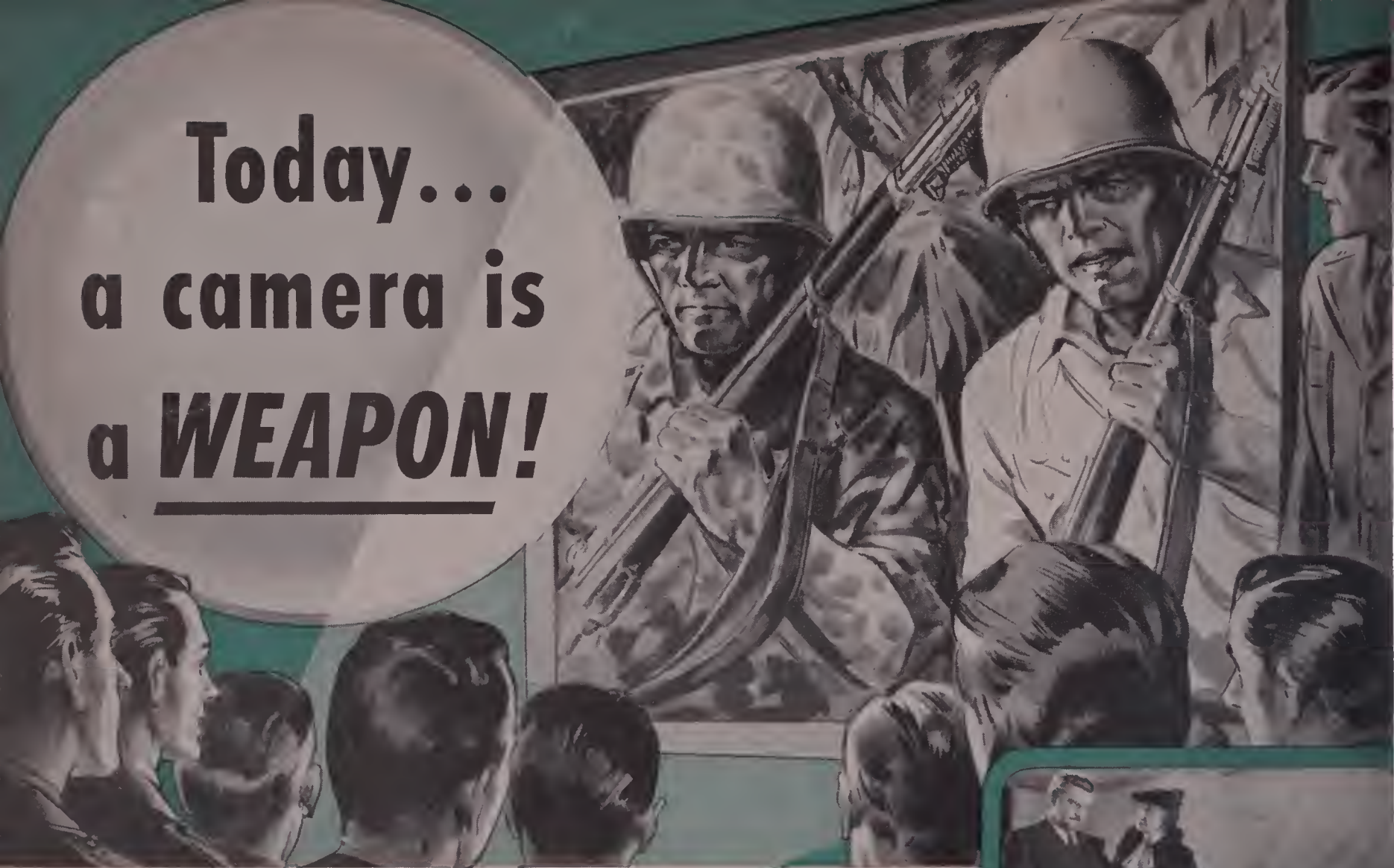


Snake-bite kit supplied our troops by the Army Medical Corps includes vacuum pump—molded of Tenite—for extracting snake venom.



Serving human progress through Photography

Today... a camera is a **WEAPON!**



Movie cameras just like the Filmo model you make your films with... projectors like the Filmo you have... they're *weapons*.

Cameramen in uniform on every battle front are filming the steady advances of our forces... recording an on-the-spot history of this war with Filmo Cameras.

And in camps... Filmo Projectors are helping in the tremendous task of training. In fighting ships... on battle fronts they're flashing Hollywood's best offerings on screens to give tired fight-

ers an hour of fun and relaxation.

But that's not all... *other* instruments, strange *new* ones, now bear the B&H name, too. And *they* are weapons... bomb sights... tank periscopes... gun cameras... and sighting devices for a host of grim war tasks.

These are the reasons why you can't buy new B&H equipment. It's simply that they're **WEAPONS** now.

Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established* 1907.

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The day *will* come... maybe sooner than we think... when we'll all be back at our *peaceful* jobs again. And when we *are*... you can be *sure* that there'll be *no* smallest piece of B&H equipment hurriedly built to meet the pent-up buying "splurge." Every B&H Camera and Projector and instrument will be as

carefully designed... as precisely built... as rigidly tested... as they have *always* been. And many models will be improved by our experience in meeting and surpassing high Army and Navy standards.



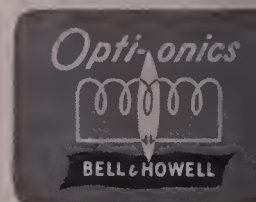
Scene from *The Courageous Dr. Christian*, an RKO feature recently released for non-theatrical showing. This lovable character comes to you in a whole series of heart-warming *Dr. Christian* movies.

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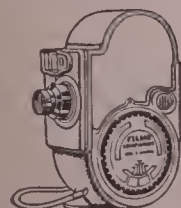
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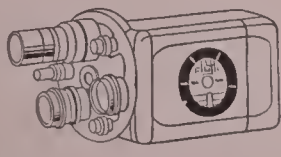
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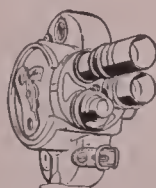
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Filma Companion
8mm. Camera



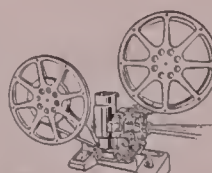
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★ THE MOTION PICTURE CAMERA MAGAZINE ★

In This Issue...

Proper Placing of Reflectors

Titles Tell the Story



MARCH
1944



Precision in a blackout

THE LIGHTS were turned on to illustrate this story, but actually both the Du Pont Research and Control Laboratory assistant and the machine she controls work in a darkroom.

The operation is one of controlling a precision apparatus that coats test batches of emulsion on the base used in making Du Pont

motion picture film. While this is an experimental coating machine, it exactly duplicates full-scale coating procedure.

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the Japanazis!

That's why there are
no Eyemos today
for civilian use

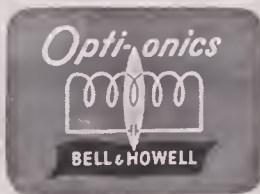
Signal Corps Cameraman T/5
Robert Quirk and his Eyemo . . .
"somewhere in England." Where-
ever things are popping, Eyemos
are filming. (Photo passed by Censor)

EYEMOS have always been famous for their unflinching performance under conditions that put both men and machines to the supreme test. Good going or tough—*Eyemo gets the picture*. That is why our armed forces need every Eyemo we have or can build . . . why we can't supply civilian demands for this famous 35 mm. camera.

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AMERICAN INEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

MARCH, 1944

NO. 3

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The Front Cover

THIS behind the scene's shot on the set of Paramount's "Lady in the Dark" production shows Ginger Rogers posing for her portrait, while Warner Baxter stands alongside. At the Technicolor camera is Director of Photography, Ray Rennahan, A.S.C. Director Mitchell Leisen stands beside the camera with a portable microphone.

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Entered as second-class matter Nov. 18, 1937, at the postoffice at Los Angeles, California, under the act of March 3, 1879.

Mother, when will you stay home again?

Some jubilant day mother will stay home again, doing the job she likes best—making a home for you and daddy, when he gets back. She knows that all the hydraulic valves, line support clips and blocks and electric anti-icing equipment that ADEL turns out for airplanes are helping to bring that day closer.

ADEL originally planned to make cinematographic equipment. However, a unique lens focusing device became a carburetor dual control which, in turn, led to development of other aircraft products. ADEL'S peacetime plans include advanced cinematographic equipment, made with the engineering skills that created ADEL'S international aviation acceptance.

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FOR WAR (AND PEACE) BUY BONDS





Bergen, The Cameraman

By W. G. C. BOSCO

RESIDENTS of Hollywood and Beverly Hills are treated these gasless days to the sight of a gallant figure in helmet and goggles, and wearing a leather jerkin, dashing around town on a gleaming motorcycle. Sometimes alone, but more frequently with a passenger on the luggage carrier to help push when the motorcycle breaks down. This ration-conscious rider is none other than that paragon of patter peddlers, that ace of entertainers, Edgar Bergen, associate member of the A.S.C.

To the great world outside Hollywood, and there's one there chums, most of the members of the American Society of Cinematographers remain, due to the inequalities of credit titles, anonymous. But everyone knows member Edgar Bergen, if only as the stooge to Charley McCarthy. The audience that listens to his program every Sunday night over N.B.C. is estimated by those mean spirited people who are envious of his success to be in the neighborhood of thirty million. His friends concede it to be closer to a hundred million. But whatever it is, any good poll, honestly taken, would have to put the Great Bergen at the top of the list.

It is not for his radio following, however, nor even for his great personal charm that Edgar enjoys membership in that august body the A.S.C. He is a highly skilled cameraman who practiced the art professionally at one time,

owns a battery of cameras and who, for the last fourteen years, has held a membership card in the New York local of the Motion Picture Cameraman's Union. In fact Bergen became interested in the intricacies of cameras long before he delved into the more remunerative art of ventriloquism.

As a boy, in his home town of Decatur, Michigan, he became the proud possessor of a box camera and made his first pictures on blue-print paper. Then he acquired a plate camera. The only one, it seems, in that thriving metropolis at the time. And he made an honest dollar or so taking pictures of immigrant members of the community who had to have them for citizenship purposes. He also photographed school groups. Not all the pictures he took in those days, he recalls, were good. But one of those that were not so good turned out to have a market value after all.

When he was ushering at Decatur's old La Pearl Theatre, where later on he got to run the projector also, he took a picture of the front of the house with the object in view of selling it to the owner. But something went wrong. When he put it out in the sun to dry, the emulsion slipped, and the horrible result can best be left to the imagination. Before he could conveniently dispose of this misadventure the owner saw it. Manfully, Bergen stood up under the gales of laughter which greeted what was to have

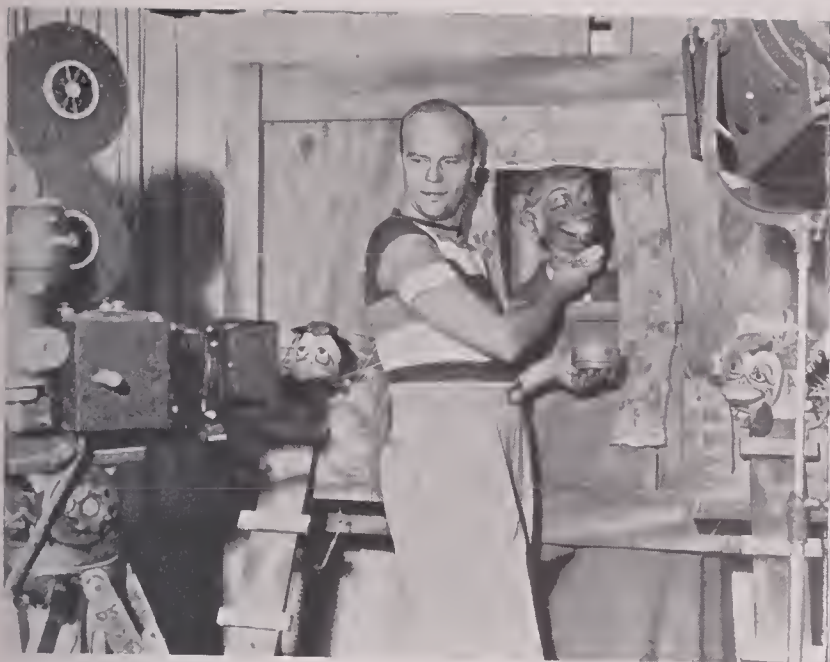
been his masterpiece. He was astonished when the man gave him twenty dollars. But when the picture appeared in advertisements, testifying to the earth-shaking theatre collapsing, laughter evoked by the current comedy screening at the La Pearl, he understood.

His first motion picture camera was a Sept, which he bought to take to Europe when he went as an entertainer with the Swedish-American Line. The idea was to shoot a travelogue of the places visited on the trip, and speculate on selling the footage. But when he arrived in Europe he found that he would have to pay a duty on the footage he wanted to bring out of the various countries. That, he decided, was carrying speculation too far. So he developed the film in little portable tanks, and brought it out, wound around his waist, under his shirt.

The film record he made on the trip to Iceland, Sweden and Norway up to North Cape, he sold to the steamship line.

When he wasn't traveling to Europe or throwing his voice about, Bergen used to go to small towns and make advertising pictures to be shown on the local screen. You know the sort of thing: a shot of the outside of Hoffenfephfer's Delicatessen; but to a shot inside the store of the most amiable and genial Mr. Hoffenfephfer in person gorgeously tanned, and horribly polite, waiting on a timid female who smiles wanly into the lense as she exits; followed by a title admonishing the audience to be sure and drop in on the way home and get something indigestible.

The year before last, when Edgar made a trip to Alaska and the Aleutians to entertain the troops, he hit on a wonderful idea for a picture. The service men in those lonely outposts were hungry for a sight of home, and American girls.



Next to seeing the familiar sights of their own home towns they all wanted to get a look at the much publicised sights of Hollywood. The result was, "Charley McCarthy's Hollywood"; on which Bergen started as soon as he returned from that memorable trip. He had it ready for his next tour of army camps on Newfoundland, St. Pierre and Miquelon, and islands off the North Atlantic coast.

"Charley McCarthy's Hollywood," is the sort of picture one would expect that impish character, who expresses so much that an inhibited and restrained society would like to express, to make. It goes without saying that it is immensely popular with the service men. It contains shots of everything worth seeing around the film capitol; all the familiar landmarks, many of the personalities, particularly the feminine variety, the homes in which they live, and so on. But its popularity derives mainly from the abandoned, and purely McCarthy manner, in which it was treated. Shots at the beach, for instance, included careful panning up and down the most delectable figures. And despite Bergen's most fearful remonstrances, the irrepressible and irresponsible Charley insisted upon making revealing closeups of what the French so charmingly call the derrier.

Bergen is a great favorite with the service men. First of all he is a grand showman. His act is as good when it is done against the primitive setting of a camp in the Arctic as it is in a Hollywood studio. He needs no props nor music. His repertoire is extensive. This is a tremendous advantage, particularly in the more remote regions, that few of the other celebrities who tour the army camps share with him.

But his popularity with the men stems from more than that. He is kind and, despite Charley's disparaging remarks, generous; and possessed of a quality of sincerity that communicates itself to those around him. Despite a popularity that has produced such phenomena as at least one church changing the time of its evening service so that the congregation would not absent itself to hear

On opposite page is Mr. Bergen making up a nurse who appears in one of his films dealing with nursing art. On same page is a nurse in a scene from one of the nursing pictures. On this page, top left, is Mr. Bergen in his studio preparing to shoot some pictures of his amazing "dummies". Top right, Mr. Bergen and his nurses listen while forthcoming scene is being outlined. Beneath them is a scene from a nursing film made by Mr. Bergen. And then we see Bergen and McCarthy as they are best known to the public.

Charley, and another that has installed a radio in its recreation room to accomplish the same purpose. Bergen remains modest and unassuming.

One night we found Edgar entertaining a soldier at one of the spots in Hollywood frequented largely by servicemen. He was just an observer, enjoying himself seeing others enjoy themselves. Never permitting his humor to become rarefied, he was "keeping in touch." Unobserved by most in the dimly lit interior, he was recognized by a youngster who, it transpired had recently received a medical discharge from the Seabees. Unhesitatingly, and without fear that he would be rebuffed or treated condescendingly, the ex-Seabee came right up to the table and thanked Bergen for the good time he had given the boys at Dutch Harbor when he was there. The Japs were still on nearby Kiska at the time, and from all accounts, Bergen's visit did a whale of a lot to build up that intangible something known as "morale." The boy regarded Bergen as an old friend, and Bergen was delighted by the unaffected expression of appreciation and friendship.

His most recent effort in film making is of a serious nature, and perhaps best expresses that side of his character about which so little is known. It consists of a series of seven pictures dealing with the nursing arts, and represents a valuable contribution to the educational material available for training student nurses. These films, prepared in cooperation with the Southern Section of the California League of Nursing Education, are exceptionally well detailed and are stamped with the mark of authority. Produced with the help of Telefilm in 16 mm. color, it is not out of place to comment on the general excellence of the product and the



unusually consistent exposure of the splendid prints turned out by that company. In both conception and execution the films mark a high level for the educational motion picture. To augment class instruction they are invaluable. Randolph Clardy, who shared with Bergen the responsibility of filming the series, is given camera credit. These films are available to all schools of nursing and may be obtained free of charge by writing to the Foundation.

The Bergen Foundation is a form of high idealism expressed as a practical

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Above, left, the magazines can be changed without dismantling the camera.

Above, right, (front quarter view). The winding crank and other camera controls are easily accessible. Note the dovetail clamps which hold the front attachments when desired.

Akeley-izing The Cine Special

By LEROY G. PHELPS

Director of Cinematography
Princeton Film Center

IT was more than twenty years ago that my old Akeley camera (its serial number is 89) first started to work for me. For twelve of those years it recorded all the important athletic events at Yale University—football, crew, track, hockey and baseball. Also it filmed five of the world's heavy-weight championship fights—including the two Dempsey-Tunney matches. Then began its expeditionary work; it accompanied Frank Buck on the "Wild Cargo" trip; next it shot "Dark Rapture," "Wheels Across Africa" and "Wheels Across India."

During this period the Akeley became practically a part of me—or vice versa. While I am not blind to its limitations (and I could name them very quickly), yet, for me, no other existing camera is so quickly set up, so easily reloaded, so "fluid" in following a moving object.

So, when shooting 16mm. Kodachrome with my Cine Special, I have missed the advantages of my old Akeley, and it was only recently that I found a way to retain them.

First I purchased from Akeley some spare parts: an outer camera shell, complete with main bearing and tilt-control gear segment, and a finder housing with pivot block and internal prisms. Putting the camera shell in a lathe, I cut away the projecting flange so that, when mounted in position on the tripod,

it became in effect just a vertical disc. On its flat, vertical face I first attached a shelf to hold my Cine Special. This shelf is made from an old Universal 200 ft. film magazine. I never throw anything away—it always proves useful some day—and this old film magazine, made of aluminum, and amply rigid, was of just the right size for the purpose.

By removing the door of the magazine and tapering off the vertical sides a bit, it no longer looks like a magazine, in fact it looks as if it were designed for this very job. The Cine camera proper is mounted on a piece of aluminum channel stock which raises it above the flat floor of the shelf so as to permit the easy exchange of magazines, without dismantling the camera.

I left room between the camera and the vertical disc so that the floating-finder housing could be mounted against the side of the disc, on a level with the camera lens. A half-inch clearance between the finder housing and the camera allows plenty of room for changing magazines on the camera.

As an economy measure I did not buy a new optical system and eyepiece for this finder; the complete unit is easily removed from my 35mm. camera by loosening one screw and is quickly transferred to the 16mm. outfit.

At first I was not sure just where to mount the camera shelf and the finder on the vertical disc. On the Ake-

ley the pivot of the floating finder is in the center of the cylinder-shaped camera, so the radius of the eyepiece is constant.

I found, however, that if I mounted the finder and camera so that their optical axes were in the exact diameter of the disc, then the camera interfered with the tripod when tilting up, especially when using a 200 ft. magazine. I was anxious to retain the greatest possible range of vertical movement, so I boldly decided to mount the finder and camera *above* the diameter of the disc.

By careful experiment I found the exact spot for mounting the shelf so that the camera could be aimed straight up to the zenith and also as nearly straight down as the tripod permits. Of course, the finder had to be mounted correspondingly high on the disc. This means that when tilting up or down the horizontal floating eyepiece of the finder does move slightly rearward or forward. However, this movement is so slow and so slight that in practice it has not caused the least discomfort.

Another problem was the placement of the "tiller." I wanted as great a tilt range as possible, and at first I could find no way to mount the stick without interfering with the tripod. I finally solved this problem by extending the main bearing of the vertical disc so that the handle could be mounted to the left of the tilt control box.

I used a pair of serrated discs here (they were once a part of an old Kliegl spotlight) so that the handle can be adjusted to any position whatsoever; a full 360-degree swing. One of the serrated discs is fitted permanently to the main bearing, and the other disc, of course, carries a socket for the handle.



Above, the finder lens slides laterally for correction of parallax, and is controlled by a micrometer adjustment. Louvres in the side of the sunshade prevent the latter from blocking the finder image.

Instead of using matched lenses in camera and finder which would result in a much smaller image on the ground glass than I was accustomed to with my standard-size camera, I decided to *double* the focal length of the corresponding finder lenses.

For instance, when using the standard 25mm. lens in the Cine Special, I insert a 50mm. lens in the finder. This gives me a full-size image on my ground glass and yet it correctly defines the angle of view. For use with the 15mm. wide angle lens, I was fortunate enough to locate a 30mm. finder lens. This is a rare item, but Goerz happened to have it. With the 50mm. lens, I use a 100mm. finder and so on. Now I have an efficient finder; I can really see what I am getting.

For the correction of parallax, I mounted the holder for my finder lenses on a plate which slides laterally, with a micrometer adjustment. The micrometer, by the way, is made from an old Pathe camera focusing screw. (Don't throw anything away).

The knob of this micrometer is calibrated for various distances from two feet to infinity and can be read from the operating position. I find that all my finder lenses have ample covering power to permit this lateral movement, so the problem of parallax is easily solved.

For a combination sunshade and filter holder I got a standard H.C.E. aluminum unit and mounted it in an old matte box bracket and arm which originally came on a Universal camera, now discarded. (Don't *ever* throw anything away). With this arrangement I use a two-inch-square filter with all of my lenses. By loosening the set-screw I can instantaneously slide the whole sunshade and filter forward on the bracket, swing my lens turret around, and immediately slide the filter and sunshade back into position before another lens. No fiddling with multitudinous adaptors, rings and whatnot, and no worry about the sunshade and filter falling off.

When using the wider angle lenses, I found that the sunshade obscured part of the finder image, so I cut away the offending side of the sunshade and substi-



Above, a pair of serrated discs allow the stick to be clamped at any desired angle; and being installed to the left of the camera mount, it cannot interfere with the tripod top.

tuted some louvres made of thin brass strips. These are set edgewise toward the finder lens and hence are invisible; yet they effectually prevent the sun from hitting the camera lens.

So now I'm happy; I have a good, reliable 16mm. camera with quick-changing magazines, mounted on a gyro-controlled tripod with a jiffy-adjustment for leveling. I can change it to a baby tripod in a twinkling, or I can just as quickly set it on its three-pointed built-in high hat. When I'm using the latter I don't have to lie on my belly to look into my finder—I simply turn the eyepiece of the floating finder straight up and look down into it. There I have a standard-size image to look at, right side up and right side to. And, as I've discovered recently while shooting a Princeton Film Center production for the Grumman Aircraft people, I can follow the performance even of a Hellcat doing its hell-bent best, with ease and smoothness and without bending myself over backward to keep it in the finder as it climbs straight up.

What about the cost? Well, by doing most of the work myself, I got out of it for a little less than three hundred dollars.

No, don't *ever* throw *anything* away. Why, I even have an optical printer which I made out of old junk—and honestly, it works *swell*!

NOTE: The article by Mr. Phelps is the type the Editor is always looking for. Everyone likes to hear or read about the accomplishments of others, especially when they are as interesting as Mr. Phelps' achievement. We will welcome articles of this nature from our readers. . . . The Editor



Above (kneeling position). The built-in high hat finds its level on any surface. With eyepiece tilted up, the operator sees his image without lying down on the ground.



Above, (camera pointed up). The floating eyepiece remains horizontal even when the camera is pointed straight up.



Aces of the Camera

Vernon L. Walker, A.S.C.

By W. G. C. BOSCO

ONE of the reasons the motion picture enjoys such wide popularity as a dramatic medium is its ability to present life-like scenes with startling realism. Nothing, it seems, is beyond the range of the camera's lense; no location or setting too remote or fantastic to reproduce on the screen. The hero plunges toward the earth in the cabin of a plane, or his boat is buffeted and tossed by an angry sea; he struggles to free himself from the deathgrip of a wild animal, or he hangs suspended in space from some Wagnerian precipice. No matter what the story calls for the cash customers get a full, and realistic view of the whole scene. And with the experts of the sound department contributing their part, nothing is left to the customer's imagination. It is this quality of omnipresence that gives the motion picture its power as a dramatic

medium, the camera-magic that gives it its aura of mystery.

One of the best dispensers of camera-magic in the business is Vernon L. Walker, A.S.C., head of the special effects department at R.K.O. Studio. A man who became enthusiastically interested in motion pictures when those first faltering, flickering efforts of an infant industry captured his imagination as a boy in the first decade of the twentieth century. He decided then and there that he wanted to make movies. And although he's been at it ever since, he has lost none of his enthusiasm.

The manner in which Vern realized his ambition, and got into the motion picture industry, is unique. The story is so complete with all the rugged virtues of determination and unswerving purposefulness, so successfully climaxed, that it would not be out of place among the achievements of other pioneers who

succeeded against seemingly unsurmountable odds.

Vern was living in Denver when he saw his first movie. He was about fifteen at the time, and working in the ticket office of the Denver and Rio Grande Railroad. Railroading seemed to have been every boy's ambition in those days, and it had been his until he saw that movie. "That," he told his father, "is the business I want to get into." But how? Nobody seemed to know just how a boy went about getting a job making movies. And it looked like a blighted life for the young enthusiast until Fate took a hand. A second-hand projector turned up in the window of the local pawnshop.

That projector might well have been the turning point in Vern's career. Dad, after much supplication, was prevailed upon to buy it. He did so in the firm belief that it would get the movie bug out of his young son's system. But it didn't work out that way.

In those days having a projector was one thing. Getting film to use in it was another. It might have stumped a less determined man, but a condition like that seemed only to have added fuel to Vern's burning resolution. Using the same tactics that had worn down his dad and won him the projector in the first place, he haunted the Denver film exchanges and talked them out of the old prints that had been torn and scratched beyond usefulness. Then, carting his treasures home, he set up his projector in the basement and gave shows to anyone who cared to come, and who had the admission price of one nickel. He didn't get very rich on this venture because the projector only threw a very small picture. But he did get a big enough kick out of it to decide to quit his job with the railroad and go to work at the old Hippodrome as apprentice projectionist. That was heaven. There he was, helping to run a projector, and being able to see those marvelous early-day movies, not once or twice like the customers who paid to get in, but hundreds of times!

After several months of projection apprenticeship Vern thought he would like to get closer to the business of making the motion pictures he saw on the Hippodrome screen. So he took the day off and went over to Golden, Colorado, where a unit of the Bronco Billy company was making a Western. He arrived during all the excitement of shooting but stood aloof to better observe, with a critical eye, the various activities that comprised the motion picture unit of that time; wondering where he would best fit in. Actor? No. He didn't feel any burning desire to be an actor. The guy giving the orders? Well . . . But the cameraman! There was a job he would like! So, it was as a cameraman that he offered his services to the company that day.

But life is real and life is earnest. Vern was turned down—cold. He couldn't convince them that he really was a cameraman. Besides, they asked him, if you're a cameraman, where's your cam-

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Report from Russia

By ROMAN KARMEN

Winner of Stalin Cinemaoperator Prize

WHEN we Russian cameramen used to meet in the pre-war days our talk sounded somewhat as follows:

"Hello, Misha, where did you blow in from? The far East covering seal hunts on the Aleutian Islands?"

"No, I've been following archeological excavations in Centralasia."

"Where do you go from here?"

"Oh, I'm going to get married and settle down in Moscow."

Then came the war, and we scarcely ever met at the studios. Boys grew suddenly older. Their hair grew gray. There were black lines beneath their starry eyes. They were seeing too much blood and suffering. Some dropped out of sight completely. Information about them was gathered haphazardly.

A cameraman would return from the front and you'd ask: "Where were you?"

"At the front," would be the reply. "I brought back three thousand feet of action shots."

"Wasn't Victor with you? How is he getting along?"

"He was until last Thursday. A shell struck too near while he was loading my camera near Poltava in the front lines."

"How about Ellipsis?"

"A plane didn't return, and he was in it."

Day in, day out, such was the typical conversation. We were at war. So were our cameramen. Well known faces were disappearing daily from our cinematographic ranks. From time to time we tried to get leading cameramen together for conferences. Just a few days ago we had first of these get-togethers in six months. Cinema group chiefs flew back to Moscow from all fronts, and we summed up our results and discussed our experiences with the Red Army in the summer offensive. The fact that the group chiefs were able to come from all fronts in itself was a good test of our operative potential. Troyanovsky even came in from the Crimea, and the conference was a big success. Solovtsev came from Leningrad. Others came from the forests of Karelia, from Novgorod sector, from ships of the Black Sea fleet, and others from the far-off Polar Tundra.

What a story the combined subjects of our discussions would make. These cameramen had been on all fronts and various phases of the war. Some had been filming at the front when the Red

Army was forced to withdraw eastward. Some had seen and photographed those unforgettable events in November, 1941, when the enemy had reached the approaches of Moscow. Others had filmed the last hours of the battles of Sevastopol and Odessa. Others in our group had recorded on film those terrible days before Stalingrad, as well as the happier days when the enemy's best divisions had been annihilated or captured, and the enemy dead were buried in mass graves. No single phase of the struggle has been missed by the cameramen.

Stalin's prophecy that our day would come has finally come true. The day of the Soviet people and the Soviet cameramen among them has come, indeed. During the most critical phase of the struggle the Red army was massing great forces of men and materials under the guidance of its supreme Commander-In-Chief, and struck its first devastating blows near Stalingrad and then proceeded to liberate the country.

Reviewing the progress we had made during the war, we cameramen desired to know whether we had been suitably prepared for this most important phase of the war which has unquestionably brought the day of victory nearer. Our experience revealed that we were properly prepared. Documentary cinematography in the Soviet Union was fully up to the mark in creative and technical development by the time the great offensive began. This was easily enough determined at the conference.

The result of our work was determined not so much at the conference, of course, as by its effect upon the Soviet spectators. The Red army's offensive has been preserved for audiences in such films as "Battle of Orel" and "Battle of Soviet Ukraine." Both documents are of great value. The same is true of the thousands of meters of film which were not included in our current events productions, but were filed away in vaults for safe-keeping as priceless records of great historical events.

At our conference we exchanged opinions regarding correct methods to work in the light of recent experiences at the front. Some groups among us were mercilessly criticized for their shortcomings. Others received due praise. There were many among us who had been awarded orders and medals by the Government. Methods for further work were outlined.

Splendid courage was displayed by Combat Cameraman Yefim Lozovseay while filming a battlefield from the inside of a tank. His tank suffered two direct hits and the crew was killed and he was severely wounded. Scrambling from the burning tank, he continued

filming until he lost consciousness. Another who distinguished himself was Boris Sher, who in the capacity of gunner and cameraman accompanied a force of Soviet attack planes in a raid over an enemy airdrome. Working first his machine gun, then his camera, he obtained valuable film material and at the same time downed an intercepting enemy FW 190.

Our absolute preparedness for all exigencies during this period of the war was the result of experience we had gained during previous actions since the beginning of hostilities. Our cameramen knew just what was needed when they accompanied the Red army over ground relinquished during the bitter days of retreat. Now when German divisions were falling back from the blows of the Red army our cameramen had become seasoned soldiers. Armed with "Eyemos" our boys along with the vanguard of our forces entered the cities of Kiev, Smolensk, Poltava, Dnepropetrovsk and Gomel. Waiting for them now are the Crimea, Odessa and the Baltic States. Once we departed from these places in sorrow, but we shall return as victors.

Who can doubt but that Vladislav Mikosha will do some wonderful work when he returns to Sevastopol, which he left with the very last battalions? The same applies to Boris when the army regains the forest region in which he spent two months with a detachment of troops. What such men can do has already been shown in the films of the summer offensive obtained in thick of the fighting in the front lines.

While writing this to my American Cinematographer friends I am reminded of my recent visit to the Moscow airdrome on a misty Autumn morning. A huge flying ship was ready to take off. Our guest, Mr. Cordell Hull, was taking leave of Molotov before returning to the United States. In the fitful light we could merely see the band playing the anthems of the United States and the Soviet Union. A gust of wind ruffled the grey hair of him who Churchill called "Mountain Eagle." Mr. Hull said a few words into a microphone about the results of the historic conference. We kept our cameras going as long as the plane was in sight. Aboard the plane there was a box of film upon which our cameramen had recorded the progress of the conference of the three Ministers at Moscow, a conference that is a golden page in the history of the friendship between our great nations.

Films are the mirrors of history. Cameramen are the spectators of historic events. Hundreds of my colleagues throughout the world are recording events of our times. They are men who witness too much suffering and blood, but each knows he is filming great battles and episodes, knows not the fear of death. We are working for man kind and for posterity. It is for those who follow that our best and bravest men are laying down their lives on the banks of

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NOTE: The intensely human article by Roman Karmen was prepared especially for the American Cinematographer and radioed from Moscow. Mr. Karmen, one of Russia's greatest cameramen, is acting as special correspondent for the Cinematographer in the Soviet Union. From time to time we shall print special articles prepared by him.
—The Editor.

Planning for 16-mm Production

By RUSSELL C. HOLSLAG*

THE term "production" is all-inclusive, and it is not the purpose of this paper to deal with the many aspects of dramatic production or with the planning of films intended for entertainment purposes. The type of production to be discussed is the one in which 16mm. is now especially called upon to perform—that of rapidly turning out films which might be called "expository," films which explain or instruct.

Since there is so much of this kind of film training to be done, we find that the task of planning such films must often be assumed by those who may be thoroughly acquainted with the details of the subject matter of the films to be made, but who may not be so well acquainted with the methods of planning and presentation that will make an effective motion picture. As a matter of fact, the inevitable growth of the expository film will make it necessary for the teacher or expert in any given subject to produce the film, rather than the motion picture expert. The educator will therefore find it necessary to learn enough about the needs of the film medium to present this instruction effectively, just as he must be able to describe his subject logically and clearly in writing if he wishes to write a text-book. And as the writer of a practical text-book need not, and usually does not, indulge in colorful word painting and imaginative prose to make his message attractive, the practical producer of teaching films need not feel himself called upon to adopt the dramatic devices that belong to the entertainment field.

Confronted by a motion picture project, the specialist with a thorough knowledge of his subject may be at a loss as to how to organize this knowledge along lines which will (1) enable the actual shooting to be carried out with a minimum of lost motion and waste of time; (2) arrange the material so that the cutting and editing do not present any unusual problems; and (3) include only the material necessary to produce a direct, straightforward result.

Since thoroughly adequate results, both in picture and sound, may now be obtained with existing 16mm. apparatus by any intelligent person who will take the trouble to familiarize himself with the necessary instructions, it follows that the most important factor involved is really the advance planning of an adequate presentation of the subject matter. Through a great deal of direct experience with this type of user of 16mm. apparatus, and through a gen-

eral review of what seems most in need of emphasis, there has been evolved what is believed to be a direct, simple method of production planning. If this method is carefully followed, experience has shown that results in the production of expository films are quite adequate, even when they are made by those who have not had any particular experience with the motion picture as a medium of exposition.

The planning schedule, as devised, assumes the use of sound commentary to accompany the visual presentation of the subject. Because of the fact that there are very few occasions where spot-recorded sound is necessary to add to the actual teaching value of the film, the plan makes provision generally for the later addition of a proper commentary after the film has been edited and breaks smoothed out. Spot-recorded sound can in many cases add to the dramatic value of the film, but this is generally apart from its straight training value.

Many who are called upon to plan their own specialized training motion pictures for the first time have only the model of theatrical motion pictures as precedents which tend to confuse the issue. In view of the pressing need for good training motion pictures at the present crucial time, we may safely assume that our pictures will be given attention by any audience which hopes to benefit therefrom, without unnecessary dramatic devices. This applies to fancy transitions, trick wipes, mood music, elaborate introductions and conclusions, entertaining animation sequences and other methods used in theatrical or persuasion films to compel attention. In view of the seriousness of the situation in which training films are now called upon to serve, it is felt that they need not entertain any more than an instruction book entertains.

Another tendency which should be avoided in advance is over-elaboration and its corollary, the attempt to include too much material in each film unit of the subject under consideration. This is generally the result of the specialist's great familiarity with his subject; that is, he is apt to assume that many points of the explanation are obvious and so need not be emphasized. This is a particularly dangerous conception in the case of a motion picture presentation, because a given action should always be followed through to its conclusion to avoid a jumpy effect. If this principle is not observed, the action when photographed may leave many fundamental points unexplained. The result will be an attempt to supply the missing explanation by means of the

commentation alone—an attempt that will usually leave the announcer breathless and the audience bewildered. The only real remedy is replanning and re-taking.

Another pitfall to be avoided is often brought about by the planner's literary ability. Many authorities can write clear, lucid explanations of their subjects and are apt to feel that they can create a successful training film by writing a good literary commentary, letting the picture simply trail along at its heels. This, of course, does not take into account the effective combination of action and explanation of which the motion picture is capable. In addition, there is always the danger of writing too much with the result that the action has to take place too quickly to keep up with the rapid explanation. On the other hand, a companion danger occurs when it is planned to photograph the operation in advance in as many aspects as possible; then to edit them and to try to fit them into a smooth-running commentary. This nearly always results in action which is either too short or too long for the proper flow of explanation.

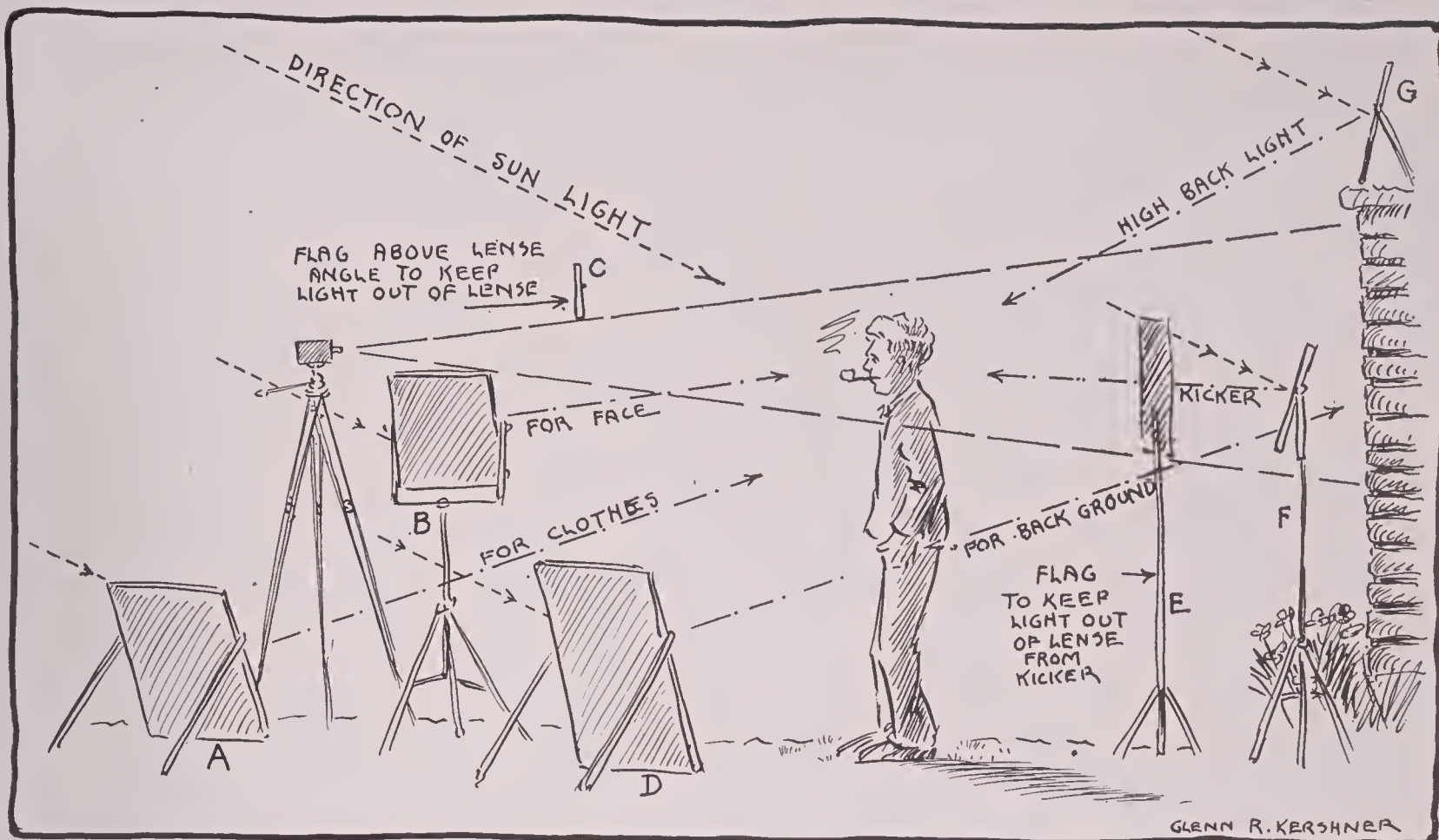
In practice the best results are gained when the visual impression is created coincidentally with the explanation or comment, the latter not involved or verbose but simply describing the action that is proceeding at the moment. Keeping this principle in mind is a real aid in planning both the visible and audible components of a training film together, thus making it fulfill a direct purpose. It is also a great help in overcoming the temptation to be too literary in writing the commentary.

One of the very practical methods for sketching out the plan of an instructional film is to make a verbatim transcript of the explanation, and resulting questions and answers, involved when a beginner is actually introduced to a new process by an instructor. This would apply with equal force to almost any subject, from the handling of a hammer and chisel to the assembly of a complicated mechanism. The information given, the questions asked, and the interval of time between questions provide a valuable index to the amount of material that should be covered in a given time on the screen.

As to the mechanical transfer of the idea material to its most convenient form for the preparation of picture and sound-track, there has been developed a simple form of "shooting script" which at least has proved successful in a number of cases where training film had to be turned out speedily. It serves as a combined scenario on shooting script and editing reference. By a simple understanding of the points already noted, together with a thorough knowledge of the subject to be recorded, a practical and direct shooting plan can be evolved by filling in each of the

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* J. A. Maurer, Inc., New York.
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Proper Placing of Reflectors

By GLENN R. KERSHNER, A.S.C.

LIKE most professional cameramen, for a long time I considered the 16 mm. camera but an instrument for amateurs, similar to a small kodak to snatch up, make a few pictures around home or on a trip to have something to show your friends where you had been. After using the large standard cameras this little one which I could stick in a pocket seemed like a plaything, and I was never very serious with the fine detail as we are when using the 35 mm. camera at the studio.

The 16 mm. camera of today is no more a toy, it is here to stay among the professionals and we are using them more and more each day to make pictures for the full size screen. Studios have recognized their value in location trips, tests of actors and of wardrobes. Interesting subjects are now blown up (enlarged) to the 35 mm. film and are seen daily on the screens of our largest theatres. I may go further and say that the Army and Navy are using them almost exclusively. Why? Because their efficiency and their compact size and light weight.

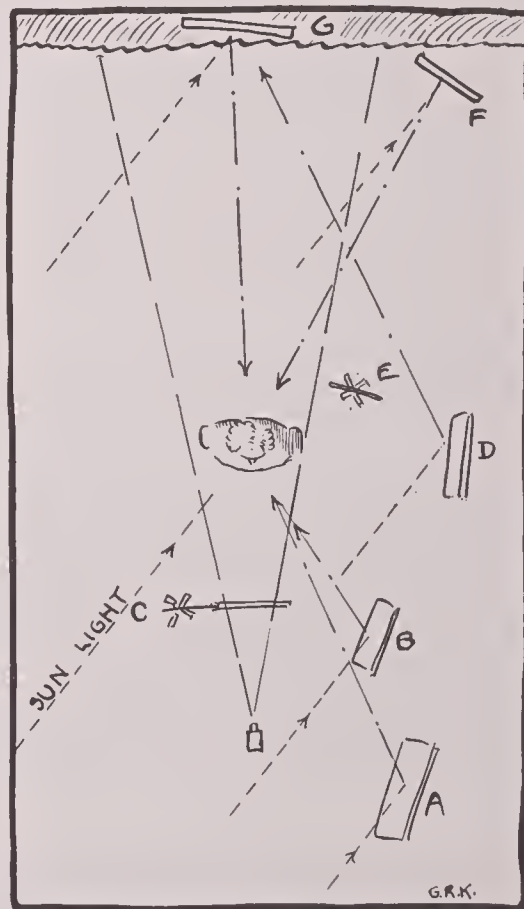
To illustrate why this small camera will mean a great deal in cost, weight and bulk to we cameramen who travel . . . for instance, in 1927 while picturing the Pathe-Bray Expedition through the Colorado River it took one complete compartment, one-half of the little six-

teen foot boat, to store my 35 mm. Bell and Howell and extra negative when we were so crowded for space to keep food and warm clothing; saying nothing of the one-hundred and seventy-five pounds of dead weight of the camera to carry while climbing steep cliffs or crawling under big boulders.

This trip was just black and white, no motor and cranked by hand but the one to the Arctic in 1931 with the Donald B. Macmillan Expedition for Multicolor, was by-pack color requiring two negatives with double magazines and large heavy batteries to run the camera motor. My Mitchell camera weighed around one-hundred and seventy-five pounds, the batteries another seventy-five and all this when in cases required twenty cubic feet of space.

One- thousand feet of 35 mm. negative weighs approximately six and a half pounds requiring a tin container ten and a half inches in diameter and one and a half inches deep. Multiply this by eighty and we have a total weight of some five hundred and twenty pounds. Add the camera equipment and we have some seven hundred and ninety-five pounds to stow away in the hold of the already heavily loaded schooner, lug over the snow and ice, or to cram into the small space of the airplane.

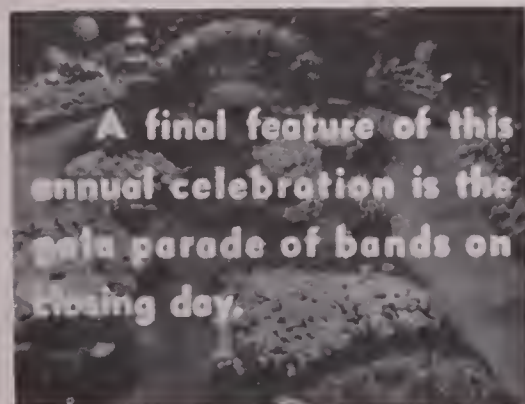
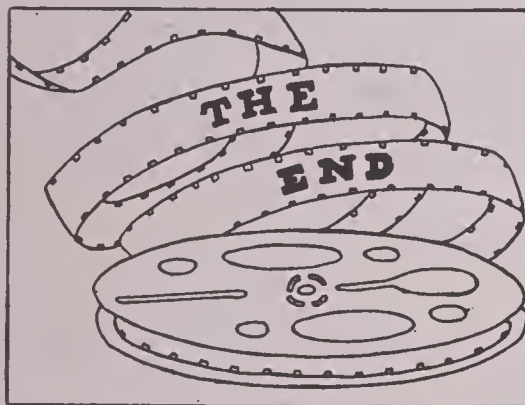
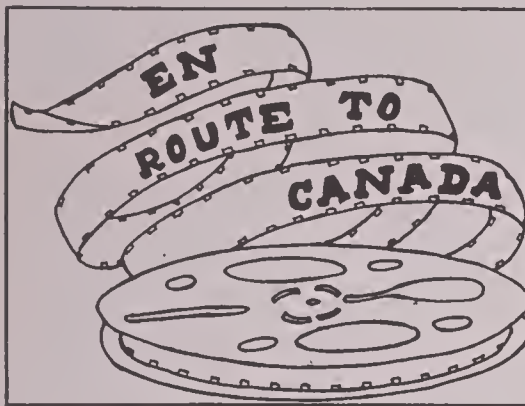
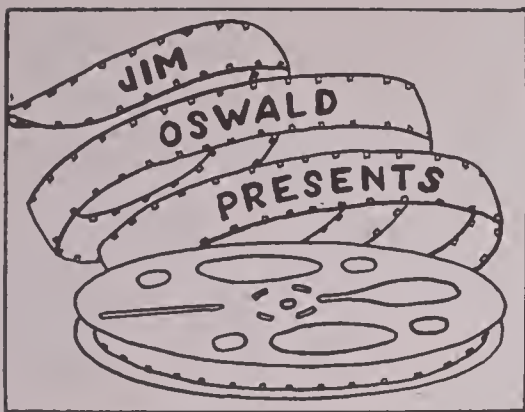
Sixteen mm. films is but one half the



Top is self-explanatory illustration showing how to use reflectors. Beneath is top view of same setup.

thickness of thirty-five mm. and as the size of the picture is much smaller it is sixty per cent less in length. (400 feet of 16 mm. is equivalent to 1000 feet of 35 mm. and weighs only one and a half pounds).

(Continued on Page 101)



Titles Tell The Story

By JAMES R. OSWALD

THE average movie maker, whose films are lacking the magical charm of a sound track, is tremendously handicapped in his cinematographic activities. No matter how technically perfect his movies may be from a photographic standpoint, there is bound to be a tendency among friends and acquaintances who see them, to sub-consciously make comparison to the talkies they see at the local theater, whether he likes it or not . . . it can't be helped!

True enough, many serious home movie enthusiasts add their own musical score to their most prized pictures, my means of records "piped" through an amplifying system to a speaker located behind the screen. Others employ an even more elaborate dual-turntable outfit, which provides uninterrupted music by fading from one record to another, without the slightest break whatsoever. Such methods have met with remarkable success, and if properly handled, reach near perfection, especially so far as scenic and vacation films are concerned. So far as lip synchronization, however, records amount to almost nil, in my opinion. Any off-timing between picture and sound can make your efforts the laughing stock of the show. What then is the answer?

In a sound film, dialogue naturally plays a very important part and aids in carrying on the continuity of the picture greatly. With silent films another means must be resorted to to put across a point . . . gestures. Most of us are already aware of that. But take a look at the average home movie! Such over-acting is carried on to the point of being ridiculous! Again I ask, what then is the answer?

The answer is titles. Nobody likes

to read titles, but they are a necessary part of every good silent film, if continuity is to be maintained. The secret lies in their proper use, which makes them as interesting as possible, avoiding boredom. Above all, they should be used sparingly . . . only where absolutely necessary, to clarify a point which is not brought out in the picture, perhaps time, location, or place, or as a "quotation" title, which quotes the words of the actors taking part in the picture. Titles always PRECEDE the scenes they caption. The copy should be as short and to the point as possible.

One way of adding interest to titles is to make them attractive in themselves. By this I do not mean using elaborate or fancy borders to set off the print. Such practices, though once popular, are now frowned upon in higher circles, as they only serve to detract from the copy. On the other hand, a picture or photographic background to the title greatly enhances its value and at the same time does away with the coldness of plain type on a plain background.

Undoubtedly one of the simplest and most effective ways of making titles, and one which requires no editing, splicing, or special equipment, is titling "on location." When this method is used, titles are made at the time the scene is shot, by taking advantage of every opportunity which presents itself to help clarify matters . . . and believe me, such opportunities are plentiful, if only watched for! Road-signs, theater marquees, newspaper headlines, calendar pages, clock hands, etc., are all "naturals" for the alert title maker, who likes to make his titles as he goes along. For those who prefer to do their titling separately, an endless variety of clever effects are possible, limited only by the ingenuity of the individual and the amount of equipment available. A poor title is worse than none, so no effort should be spared to make the most of the situation.

(Continued on Page 101)

Titles should be matched in any film as the three top titles on this page. A sign is perfect for a title background, as is shown at left. Picture backgrounds, bottom left, are also pleasing. Poorly lettered titles are worse than none. Make them neat and easily read to improve your home movies. The one below is neat and legible. The one lower right is neat but confusing to the eye.

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Let's Be Efficient

By JAMES PRINDLE

THIS is an open letter to say that in time of war there is a need for more simple, obstinate people who will ask some simple questions.

The war brought an enormous demand for the production of audio-visual aides for uncounted tasks of mass training, mass persuasion and indoctrination and for some very important, very small specialized aides for the busy leaders who must work efficiently at the top of World War II.

There is no question of the effectiveness of the film medium. The history of the present war will have a section devoted to the service of the film industry. But there is one aspect of wartime film-making that hasn't yet been brought to the fullest possible efficiency.

Think back to the confusion of the early days of the war. A bewildering mixture of military men, reservists, documentary producers, commercial producers, educators, amateurs and other producers of trailers, shorts and even great entertainment films all got together in a thousand different places, for a thousand different reasons to try each to do what he could to supply the demand for films that would help in the many wartime uses for pictures with a purpose.

The very nature of war, whether you begin to manufacture a new airplane engine or produce a training film on how to maintain the engine, a tactical film on its combat use, or a strategical film on a fast evaluation of its actual experience in battle . . . all of these things mean difficulties, headaches, confusion and a certain amount of waste.

The demand for war films was fantastic and everybody from all sides of the industry pitched in. This writer found himself in a small corner of the activity making an assortment of different films that covered such a variety of subjects as the flight characteristics of an F4U all the way to how to put a needle into a vein to take or give blood, how to shoot a Springfield, the secret of Marine pride and the problem of mobility for the Army.

The big, general jobs of mass training, indoctrination and related mass problems are being effectively organized, produced and used. But the smaller and, in some cases, more important jobs of serving the top few with illustrations and evaluations of the materials and experiences of combat zones are still experimental.

There are many reasons for this. There aren't enough people who know about fire control, for instance, or who have ever heard of the real problems of logistics or what the JCS needs on films.

Go back in your mind to normal film production.

Think of any important stage in Hollywood.

You don't have to sit there very long, as an outsider, before you discover several interesting things. You realize that there is real purpose behind all the showmanship. You can see that there are stars on both sides of the camera. And, the longer you sit there, the more you will feel a real admiration for the assistants, the grips, the prop man, even the sleepy looking guy with a gobo . . . because whatever the great minds dream up—for a purpose—is eventually put on the screen by the technicians, the little men and women.

The process may be long and expensive but somehow it gets up there on the screen. And the result can be measured at the box office. In a more peaceful world, entertainment films come rolling out and enough of them bring a reassuring chink at the box office.

But war has nothing to do with the box office.

The purpose for films in wartime are infinitely varied but there is a real purpose for each foot of film.

It is perfectly logical that a man who knows how to produce a successful dramatic story, a great musical, or any other entertainment film, does not necessarily know anything about interpreting global war's details for the men who must get the answers and get them quickly.

The technicians, the equipment, the fundamentals are all there but the purpose is different.

Look over in the commercial field. The men who could make a film to train salesmen in selling a product do have some understanding of training and salesmanship. Their experience accelerated the military training program but few of them were qualified for the more refined and difficult jobs of being the eyes and ears and the suggestive part of the brains of the few who must run the war.

Look anywhere from Hollywood to New York or Detroit to New Orleans and you will find only a handful of men who could make more than a film report of what they saw or what happened.

Film reports, like mass training or a dozen other related projects, have an immediate value but they don't solve the more immediate problems facing the men at the top.

There is a whole world for a stage and, scattered around in a dozen theaters of war are a great many able crews, a great many others are available. But all too many pictures are

being made which do little more than report on the superficial aspects of modern war.

There seems to be a great need for someone, a simple, obstinate someone who will keep asking *why*. "What are we going to do with it? What's it for?"

Questions like this can't be answered in the field. No ordinary producer knows what to do with a crew in Iceland, Sicily or any place else.

Take a common problem: a battle.

A battle on land or at sea or in the air is a terrific, complicated spectacle if you can put it—or even a few parts of it—down on film.

It contains tactical problems, new weapons problems, dozens of complicated problems of time and place and all this is interwoven with the larger problems of strategy.

The important phases of each battle could be photographed or reproduced through a combination of photography, animation of several kinds, and with frozen frames and the proper evaluation from the sound track, these important phases might be condensed to ten minutes running time.

Think what it would mean to the men who must make the big decisions if they could get this kind of a film—regardless of its quality or entertainment content—fairly quickly after something happens.

Generals know what a mortar firing or an infantry attack looks and sounds like. Admirals know what a torpedo plane looks and sounds like diving on a battleship. But there are a lot of details about any action that they don't know until all the voluminous reports have been carefully read, studied and interpreted.

This is only one problem but it is a big problem. An illustration of how difficult it is to know all the answers can be seen in the battle of Jutland. Even today, there are many inter-related and important problems of that very significant battle that are not well understood. And Jutland happened over a generation ago.

Wartime film-makers are trying to bring the world home on film, to bring the battle back quickly and to do some of the many things that film can do. But after seeing hundreds of their films and helping to produce about fifty of them, myself, this writer feels a great lack of simplicity and purpose.

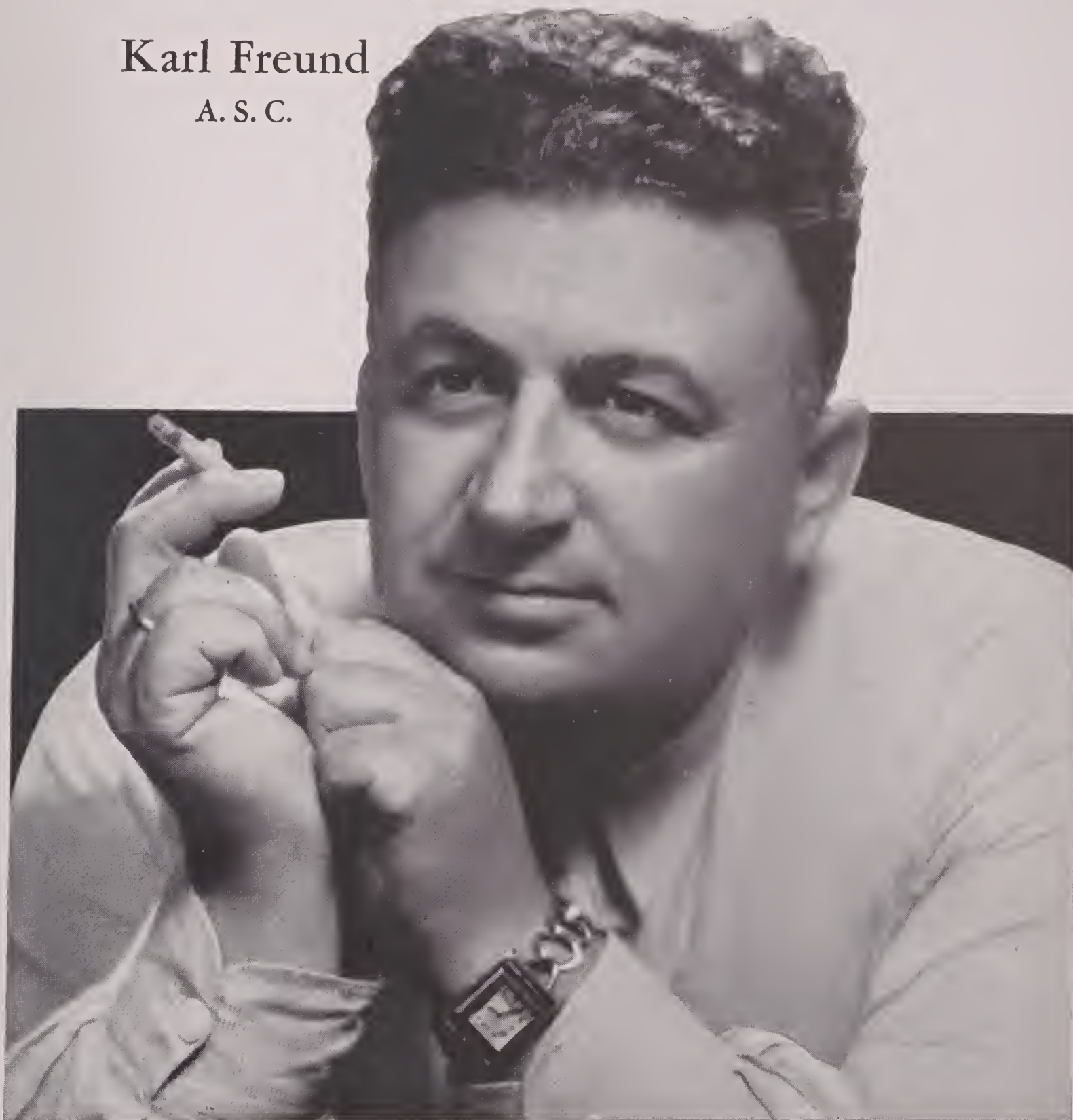
Someone should stand between the men at the top and the able units in the field and constantly try to determine what is needed today and what will be needed tomorrow.

The battle's real interpretation on film is only one of a great many needs for the industry's ability to put anything on film. Some of the others are confidential or secret. Some aren't even known at this moment. But just as the technicians and crews of Hollywood, the commercial producers or the documentary men and women and the educators . . . all of them can supply

(Continued on Page 102)

*"I wouldn't dare shoot a picture without arcs
to give that final brilliancy and effect."*

Karl Freund
A. S. C.



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Fundamentals of the Film

By F. C. MOULTRIE

I HAVE called this article "Fundamentals of the Film" for the sake of brevity. Actually it is a discussion of the basic facts underlying not only cinematics, but all entertainment, whether it be presented in the medium named or in that of a painting, a still photograph, a stage-play or a book.

In motion-pictures,—which are, of course, our particular medium of expression,—the proper manipulation of the arts of editing and cutting, rendering of "mood," etc., is required, in order that the planned results may be realized. This aspect will be referred to later if our line of argument should warrant it, although it does not directly affect the fundamental ideas which compose our main topic.

The universal interest displayed by children in their experiences and surroundings is because all these things are new to them, but when these emotions and experiences have been encountered many times they become commonplace and no more entertainment can be derived from them. It might be well now to pause and consider a simple example. First let us imagine a very ordinary set-up, such as a book lying on a table. This would not command more than a momentary glance at best. Let us, however, take a photograph of it, reasonably closely, and we may call forth admiring, sustained study of the resultant picture. Why? Simply because the photograph, being but a pictorial representation, is artificial, and as such, is not entirely commonplace. If the photograph is made from an unusual angle, with special lighting effects and is magnified to abnormal proportions, then we have added features which give the photograph still more "entertainment value."

In consideration of these facts, it would seem apparent that "entertainment" is obtained from something which is novel enough to excite our emotions, senses, admiration, vanity, curiosity, etc. to a degree not ordinarily experienced.

In order to fulfill these conditions in the making of a film which will be of interest to others, we must follow some definite theme or story and infuse it with varying "doses" of artificiality, adventure, fantasy, romance, idealism, mysticism, horror, fear, passion, suspense, grandeur and any other such elements as may appear to be necessary.

Our own ingenuity must determine the line to be followed in any particular type of story and just what we will pack into it to cause the audience to "sit up and take notice."

Many persons will remember the early days of the motion-picture. How wonderful it was to see an enlarged photo-

graph spring into action! It was such an overwhelming novelty that nobody cared *what* was flashed on to the screen, so long as it was a "living picture." One felt as though it would be impossible to grow tired of watching such a miracle. But we became accustomed even to this, and so a motion-picture was in due course accepted as just another one of the "ordinary" things of life.

This brings us to an important milestone in our analysis. The man who secures a movie-camera and experiences the thrill of filming a moving object and of seeing it apparently reproduced exactly as he filmed it, is, in a sense, back at the beginning of "living pictures" again,—the main thrill this time, however, being secured from the fact that he photographed the scenes; automobiles passing along a street, smoke pouring from a chimney,—anything! But he may be disappointed when the friends to whom he exhibits his films, fail to react with the same enthusiasm. The reason for this is that it was not they who photographed the scenes. To them it is like witnessing a very early movie, when anything suited so long as the picture was animated; but there is no longer any thrill in merely seeing a movie "move." They are attentive only to the extent to which they secure entertainment from the film as understood by modern standards. This means we must have *continuity* and incorporate one or more of those artifices mentioned earlier.

Now it is recognized that perhaps the majority of substandard movie-camera owners have invested in these instruments with the intention of making nothing more than "personal records." If such remains strictly the case, there would be less need for this survey of principles; but are we not aware of the fact that we invariably trot out our personal movies and show them to friends?

Furthermore, as we grow more adept at photography, we will one day be taking our camera on a fishing-trip or,—in peacetime—possibly on a vacation trip abroad. Upon our return with motion pictures secured on our journey, it will not merely be to our immediate circle of friends that we display them, but it may be before the membership of a club or a church or to business associates. So, it is essential that we use great care in making films which we will be showing to a wider audience.

In this connection, we do well to remember, too, that the wording of the running commentary,—whether spoken or written, as well as the musical and sound effect, (if any) have an extremely marked bearing on the ultimate impres-

sion and must be considered as an actual *part* of the film,—not as detached, rough subsidiaries to a series of jumbled movie shots.

The continuity tempo, expression, volume and flow of words and music, inflexions of voice, etc., should be given as careful attention as the complementary parts of the film itself. This is not so difficult as might at first appear; particularly if we can absorb the various basic principles about which this article is mainly concerned. When a composer writes a piece of music, he places notations throughout the score,—"*fortissimo*, *crescendo*, *allegretto*," and so on, which, if followed, enable reproduction of the intended expression. A film should be thought of in a similar fashion, in cutting it for tempo, photographing for "mood" etc. The difference between a mere animated photograph of a moving object when appearing as part of an "unplanned" film and as part of one of the properly planned variety, can be appreciated from the following example: Imagine an automobile passing along a street. It is just a moving object. If, however, it is part of a film story, the unfolding of which has revealed to us that the auto is carrying a kidnapped heiress or perhaps a gang of hold-up men, then there is a purpose in filming it and it will become one of the factors which will hold the attention of our audience. If at the same time there are hard whines of police sirens, firing of shots, etc., the car still remains a moving object,—but with what a difference! In fact the entire scene, street included, seems to change. We are tense. Our emotions of adventure, expectancy and suspense are stirred. Thus we derive entertainment! We can also see, from the foregoing example, how that music and sound effects and dialog, can become part of the film itself, as was stated.

The question is, what are our films going to be? A collection of mixed animated photographs, or a planned set, forming an integral unit? It is true that we do not all have the time to write scripts or make elaborate preparations, but even the making of a few notes will help a great deal. Should this absorb too much of our time, a mental plan is better than nothing.

Admittedly, we sometimes discover that conditions met on the site may prevent our securing the shots we had planned. Nevertheless, if we have some pre-knowledge of the *types* of shots we require, we will not find ourselves at a loss. Suppose we say to ourselves, prior to an intended trip to Mexico, that we will secure shots of the following TYPES: ancient and modern architecture, native arts and industries, native customs, beliefs and superstitions, city life and country life, historical and other landmarks.

Thus, while we may not be able to obtain a picture of an Indian making pottery, we may be able to secure shots of an Indian weaving a blanket. We may

(Continued on Page 92)

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Fundamentals of The Film

(Continued from Page 90)

not find it possible to be present during the performance of a native dance, but we may be around when a native wedding is in progress. We will in this manner still be provided with the TYPES of shots we had planned.

Never forget that people are interested in *people* first, in *animal life* second, in machinery, land and seascapes third.

It is a mistake, however, to populate a scene continually with members of one's own party. If this must be done, do it unobtrusively and then only once or twice. Far better it is to concentrate on the native population, especially in the form of plenty of close-ups of interesting or odd characters, or of those engaged in some occupation which is being made a particular subject of.

While it is advisable to include a few scenes of a nature familiar in the place from whence you came, (in order to create a "link" for the sake of your home audience), do not dwell on these, but bear down on the things that are *different*. In a city, you may find the same types of business buildings with which you are familiar,—but what peculiar taxi-cabs and street-cars! What unique methods of collecting fares! One may pass along a row of familiar looking stores, then suddenly come upon one which is the home of a "public letter writer." If so, concentrate upon it and show how this strange calling "operates." Trains may be the same there as elsewhere,—generally speaking,—but a brief trip into the outlying country may bring us to a narrow gauge railway upon which we may take an interesting journey through jungle land, and it may have an odd-looking little engine. The kind of stations we arrive at, the type of ticket office, the people inhabiting such a remote spot, the freight carried,—all may provide possibilities for film material.

The importance of EDITING, to say nothing of other factors, can scarcely be over emphasized, because it involves a principle called "association of ideas." The following is an example which it is hoped will make this clear. Let us imagine we have TWO shots. One consists of a person walking across a room and off scene. The other depicts the same person ascending a staircase and off scene. If, in editing, the shot of "crossing the room *precedes* that of the staircase, then we subconsciously jump to the conclusion, in watching it projected, that the person is crossing a lower room to approach the staircase, which is later reached and is being ascended to gain an upper floor. If, however, the staircase shot comes first, we naturally conclude that the room is located on the upper floor, since the staircase was being ascended to reach it. If, again, the person appearing in the shot of the staircase is not the same as the one shown in crossing the room and we cut the staircase shot in two, inserting the former between the two halves of the latter, we would conclude that both events were oc-

curing at the same time. If we "Lap dissolve" one shot into the other,—our premise is usually that the events are taking place at the same time but at different locations.

This may not always be the case, as it may be used to denote a difference in time also—the thread of the story itself determining what assumption we arrive at.

A "fade" from one scene to another almost invariably indicates a difference in time. "Montage," (both the composite variety and the quick-following type), presents another aspect of the principle of associated ideas. i.e.—Our impressions of the newspaper world may be "busy desk-men, headlines, giant presses pounding out late editions, street corner news-stands and busy pedestrians hurriedly snatching a paper as they swirl by, telephones and teletypes busy with late news,"—Such shots as these, presented all together in one composite scene, or in brief staccato flashes following each other in rapid succession, are known as "Montage." It is a useful device and should be remembered as one of our stocks in trade.

Our ability to make use of the foregoing or any other cinematic practices depends, of course, not only upon the degree of ability we have attained but also upon the equipment we have available.

The space and scope of this article does not permit our dealing with this angle, but might form the subject for some future consideration. In drawing to a close, we would like to make a simple suggestion regarding titles. We believe that, if adopted, this would offer a minor contribution towards making "personal" movies a little more "impersonal" from the point of view of an audience composed of friends and relatives. If we have been in the habit of wording titles in the first person, let us discontinue this in favor of substituting an "objective" or third-person form instead, viz: Such title wording as—

"Our 1937 trip to Rio."

"We play deck quoits."

"Our first glimpse of Rio."

may well be eliminated in favor of:

"The Dixons' 1937 vacation."

"The Dixons' try a hand at deck quoits."

"First sight of Rio."

Such wording in no way detracts from the value of a film as a personal record, but it does assist others to "take it" without that shut out, excluded feeling which a "first-person" treatment gives an audience. While it is difficult to obtain sufficient quantities of raw material with which to construct new films throughout, re-titling old reels and re-editing and cutting, could employ many profitable hours, and it is not hard to visualize the possibility of providing ourselves with films so completely transformed that we would not only take pleasure and satisfaction in showing them, but may also have secured valuable practical experience which we can advantageously apply to our future film making.

"Romance of a River"

Associated Screen Studios have completed a new motion picture in color for the Hydro Electric Power Commission of Ontario, entitled "Romance of a River." It chronicles a romantic chapter in the history of Canadian engineering achievement—the diversion of northern waters a thousand miles and more into the St. Lawrence river system.

It is the story of how engineers damned the waters of the Ogoki River watershed, turned them back from their northward course into James Bay and the Arctic Ocean, forced them to flow southward through Lakes Nipigon and Superior into the St. Lawrence. In successfully completing this achievement they increased Ontario's potential power resources by 360,000 horsepower, and paved the way for a \$50,000,000 power development program in the years to come.

This is the story of Hydro's harnessing of the northern wilderness to serve Ontario homes, factories and farms. It gives some insight into the vastness of the project, showing engineering and construction work carried on in colorful northern summer and bleak wilderness winter.

Premier George Drew of Ontario is shown throwing the switch to start the 65,000 h.p. generator at the new Decew Falls power plant, and explaining the significance of this new accomplishment of Hydro. Dr. T. H. Hogg, Hydro chairman appears in the picture as well, to outline how this diversion of a river will benefit Ontario citizens and industries.

New Film Sound Releases

BETWEEN US GIRLS (Universal)

8 reels, \$17.50

A modern comedy concerning a young stage star who masquerades as a 12-year-old tom-boy to help her beautiful mother win the handsome man she loves. Quite incidentally she takes over her new step-father's handsome son. (Diana Barrymore, Robert Cummings, Kay Francis, John Boles, Andy Devine). Available from March 4, 1944, for approved non-theatrical audiences.

EAGLE SQUADRON (Universal)

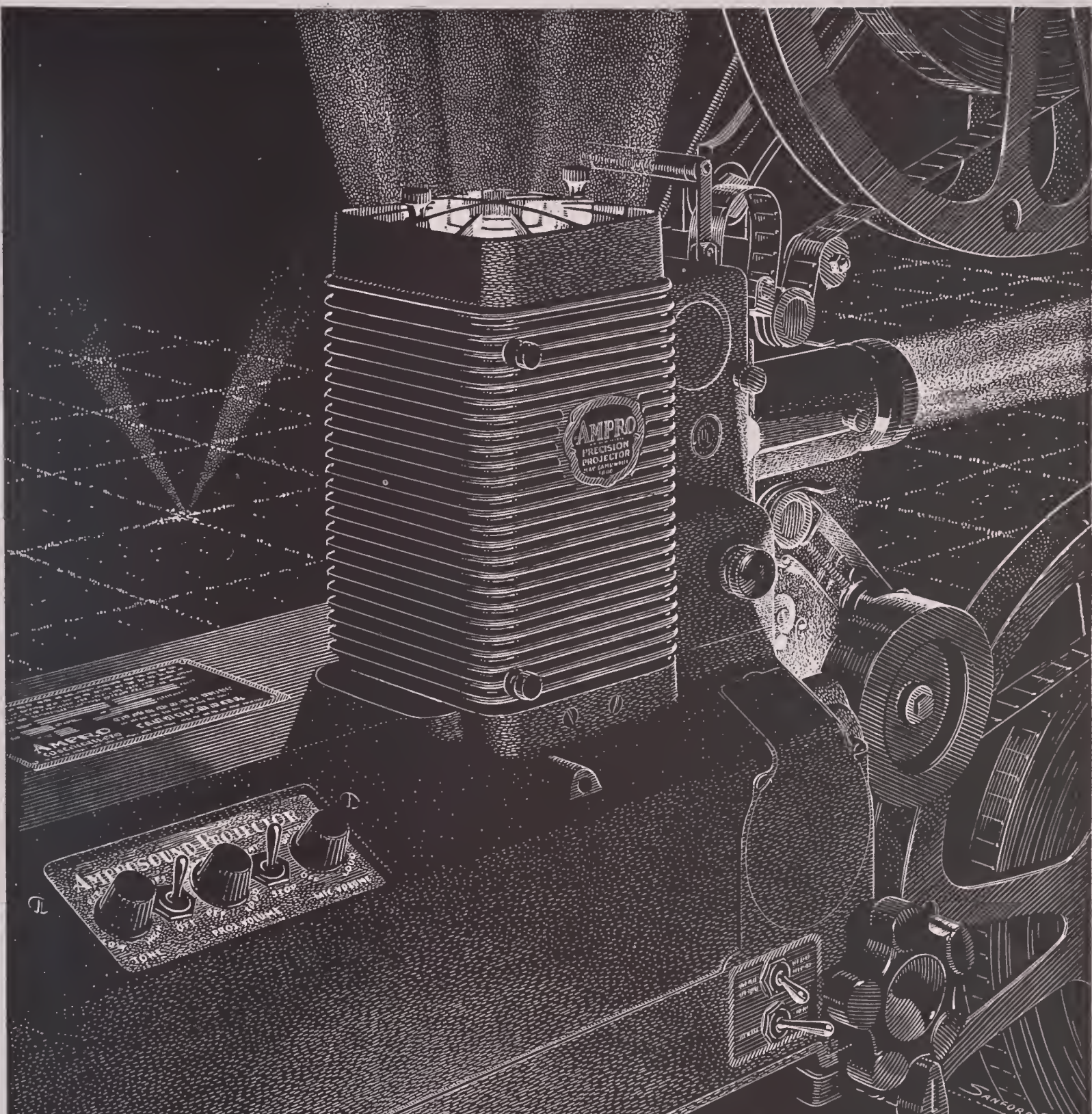
11 reels, \$17.50.

America's young Eagles fly north to reinforce the heroic R.A.F. A wealth of real combat photography made over England, France and the Channel, serves at a thrill-packed background for a gripping and romantic drama of men and women at war. (Robert Stack, Diana Barrymore, Jon Hall). Available from March 19, 1944, for approved non-theatrical audiences.

New CIAA Film

Production of UNIVERSITY TOWN for the Coordinator of Inter-American Affairs has been started by The Princeton Film Center.

Depicting the wartime activities of an American college community for Latin American consumption, the picture is being made in Princeton, New Jersey.



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• PRECISION CINÉ EQUIPMENT

Aces of The Camera

(Continued from Page 82)

era? You mean you have to own your own camera before you can be a cameraman? Vern was horrified. He wasn't quite able to compass the thought of owning one of those things. Why, he'd be an old man before he could save enough to buy one! And he didn't want to wait till he was an old man. So he decided to make a camera.

The first step towards the making of the camera was the purchase of a projection head from an old Selig Polyscope which, Vern had discovered, had a movement similar to that of the Pathe camera of that time. That was the beginning. But it was only a beginning. What had looked so simple when seen through the eyes of youthful enthusiasm was taking on the proportions of a major project. There was a lot of machine work needed. And while he knew exactly what he wanted, Vern couldn't quite get the tools he had to perform in the necessary manner. Expensive equipment seemed to be needed to make these parts for this projected camera. And the people who had the equipment wanted the most fantastic sums to turn out the simple things he needed.

Having no money to pay for the work, Vern decided to do the next best thing. He went around to all the companies who might possibly be equipped to do the job, and when he found the one he wanted he went to work there. The Denver Rock-Drill and Machinery Company was the favored firm. Little did they know that the bright young lad they hired on that memorable day loved them not for themselves but for their well equipped workshop. Then it was the young camera designer and builder discovered that it wasn't enough to have the use of all those wonderfully shiny tools. You had to know how to use them. People took years to learn to run some of them, he was told. Years! Vern was in a hurry. He had to have that camera. So he picked out the skilled men in the shop and artfully took them into his confidence. If the part he needed was simple to make, they would show him how. If it involved a high degree of skill they made it for him, working either on the Q.T. or in their spare time. They couldn't say "no," his enthusiasm was so contagious.

It took six months to complete all the components for Vern's first camera. It was the longest six months he had ever spent. Finally, the last part was finished by a collaborating workman during the lunch-hour. Vern didn't wait. He quit the Denver Rock-Drill and Machinery Company right then, and dashed home to assemble the parts.

The fact that the camera, when it was assembled weighed between seventy-five and eighty pounds didn't worry him a bit. He had other worries. There was a tripod to get, somehow. And raw film stock.

What to do! Should he go and get

another job, and try to save enough to buy a tripod? It seemed such a waste of time. After all, the camera was the main thing, and now that he had that he didn't think he would be able to keep his mind on another job until he had got to use it. So he decided to make a tripod. It wasn't much of a thing when it was finished. He couldn't tilt or pan with it because it had no free-head. But it was made of good, heavy hardwood slats, and it did support the great box he had built.

The raw stock offered a different problem. Eastman was still operating on a cash and carry basis, and Vern felt that he mustn't tempt the gods too much and try to make his own film. He had just about decided that he would have to go to work again, anyhow, when he ran into a man who was selling Edward's raw film. The salesman looked like a God-send. And of course, he hadn't a chance. He gave Vern 200 ft. of film just to get rid of him.

Now that he had everything he needed, he cautiously but confidentially went about making his first test. Had he come by his equipment and film more easily he might have been less painstaking. But he had learned more than how to make a camera in the last several months.

The test went to the Ford optical Co. in Denver, for developing. When, after the proper amount of time had elapsed, Vern went to pick up his film the owner of the business came out to see him and asked him to step into the office. Suddenly he was afraid. Something was the matter but he couldn't quite make up his mind what it was. All he hoped was that there were not going to be any extra charges that hadn't been figured on. His sweaty hand closed over the hoarded money in his pocket.

"Where did you get this film?" Mr. Ford asked him.

"I shot it myself."

Now he was sure trouble was brewing.

"Whose camera did you use?"

"My own."

"What is the make of the camera you own?" The man was insistent.

"It isn't any make. I made it myself."

"You made it yourself?" Mr. Ford was standing up and leaning over the desk towards him.

Then Vern knew what the trouble was. There must be a law against making cameras. And no one had bothered to tell him. He was not prepared for the next move. Mr. Ford came around the desk and put his arm around Vern's shoulder, and offered him a job making cameras. It seems that the first test that young Walker had shot on his laboriously-built home-made camera was excellent. It had Mr. Ford all excited. So Vern went to work, making cameras and portable projectors for the amateur trade that were marketed right up to the time of Mr. Ford's death.

During the time he worked for the Ford Optical Co. Vernon received a good

camera training making tests on the camera he built. But he didn't feel he was a real, full-blown cameraman. So, after eighteen months he decided to make the plunge and be one. On a freelance basis.

The first subject he shot was the Littleton to Denver Marathon, a foot race sponsored by a Denver paper, which he subsequently sold to Gaumont News for \$1.00 per foot. It was shot on that first camera. In fact he continued to use it, covering all the newsworthy events thereabouts, for the next year; and winces today as he thinks about lugging that heavy camera about the country. Although it probably had a lot to do with building up the present robust Walker physique.

After a year or so of free-lancing around Denver, Vern acquired a professional camera and a new ambition. He decided that Denver didn't offer enough. So he moved to Detroit, where he was born, and where he thought he had some connections. He had connections alright. But he had also connected with a bum camera. The Urban camera he had spent his hard-earned \$350.00 for scratched so badly that it almost stunted his ambition. In fact it was so bad that he was losing 50% of his sales because of it. Fortunately, however, it was hockable. So he hocked it and went to work in the Acme Theatre in Highland Park, right across from the original Ford Automobile factory, as a projectionist.

When the Urban came out of hock it was promptly sold and replaced by a second-hand De Brie. The De Brie brought a change of fortune with it. Vern met H. N. Nelson in the camera shop and that gentleman hired him on the spot to go to work for his company, the Nelson Motion Picture Company in Windsor, Ontario. The salary was \$35.00 per week, with the camera thrown in. The year was 1912.

After six months with Nelson, Vern went on an expedition to Alaska with W. E. Bock, a millionaire of Toledo, who wanted a cameraman along on the trip. As soon as he returned he went to work for the Scenic Film Co., in Atlanta, Georgia, with whom he stayed for two years. It was in Georgia that he bought another camera, Bell & Howell number 64. Then, back to his honie in Denver as staff cameraman for the Selig-Tribune News on a lush salary of \$35.00 per week guarantee on a footage basis. Of course the film was thrown in.

When the Selig-Tribune folded in 1917 Vern Walker joined the army. He wanted to be sure that his talents were used to their best advantage in the service of his country, so he joined the Signal Corps. During the entire length of his enlistment he handled neither camera nor gun. All he did was latrine duty and shovel coal. He became pretty handy with a shovel, he says. And, probably to beat the boys to the punch, he says he still knows how to handle one.

(Continued on Page 98)



The Navy Commissioned Kodak Medalist "as is"

Official U. S. Navy Photograph

IN THIS WAR, the camera has full military status. From Admirals down, Navy men carry a Kodak Medalist as casually as binoculars. It is the impartial fact-gatherer and reporter of action. You have seen plenty of Medalist shots among the terrific pictures released to newspapers and magazines. But you've only seen a fraction.

* * *

When the war broke, the Medalist had just been created—for civilian camera enthusiasts. Navy experts tried it out. It looked and acted

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The Navy bought every Medalist available "as is," ordered production stepped up. Since then, wherever units of our fleet have operated—from PT boats to capital ships and aircraft—the Medalist has seen action. Twice as many were on duty the second year as the first.

After the war, the battle-conditioned Medalist will be at your service in civilian life. Eastman Kodak Company, Rochester, N.Y.



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AMONG THE MOVIE CLUBS

L. A. Prize Winners

Results of the annual film contest of the Los Angeles Cinema Club, held last December 8, have just been announced. Following are the winners:

First Prize—to Guy Nelli for "Outside the Big Top". Second Prize—to Edwin E. Olson for "The Stormy Tetons". Third Prize—to Carl H. Thomsen for "Summer's End". Fourth Prize—to Mrs. Mildred Zimmerman for "Love Story". Fifth Prize—to Jack Shandler for "From Now on to Victory". Sixth Prize—to Newell W. Tune for "The Klamath Wonderland".

Saint Louis Club

Three outstanding films highlighted the February meeting of the Amateur Motion Picture Club of Saint Louis. "Bohemian Baloney", acclaimed by many as one of the finest amateur films of 1943, received an ovation when screened. It was photographed by Werner Henze, who is noted for his remarkable work. Lee Franz presented "Mexican Interlude", part in color and part black and white. E. L. Billingsley offered another treat with a film covering El Paso, Jaurez, Los Angeles, San Francisco, Santa Catalina Island, Zion and Bryce Canyons and the North Rim of the Grand Canyon. All in all, an unusual evening's entertainment.

Southern Cinema Club

February meeting of the Southern Cinema Club was devoted to practical demonstrations of lighting indoor shots. Ben Gale, the club's new president, had charge of the demonstration. Club members feel that actual demonstrations of how to make good pictures is of vital importance, and during the coming year plan many technical meetings.

Long Beach Installs

A gala affair was the installation dinner dance of the Long Beach Cinema Club, held at the Lakewood Country Club.

The following officers were installed: dynamic Mildred Caldwell, President; Clarence Aldrich, 1st Vice-President; Carl Weldon, 2nd Vice-President; Forrest Kellogg, Secretary; A. Warren Nash, Treasurer.

M.M.P.C.

"Down Mexico Way", 2-reel Kodachrome travelogue by Frank E. Gunnell; "Playing With Fire," one-reel black and white by Murray Tucker; and "With Pack-Horse and Camera in the Canadian Rockies" gave much entertainment to the members of the Metropolitan Motion Picture Club at its February meeting.

Utah Cine Arts Club

The first issue of the Utah Cinemagazine, published by the Utah Cine Arts Club, has just reached our desk, and we hasten to congratulate the club and those responsible for the excellence of the magazine. It is printed on fine paper; has attractive type faces; is intelligently made up, and clearly indicates that this club is interested in doing things artistically. Again, congratulations . . . H.H.

Tri-City Club

Membership of the Tri-City Cinema Club of Davenport, Rock Island and Moline is rapidly increasing. Last month saw the fifty mark passed. Club officials are pointing to doubling the membership in 1944.

Five films were screened at the February meeting, following an interesting discussion on the technique of projection. The films were "Mexico and the Mardi Gras", 8 mm. Kodachrome by Ray Schmidt; "Our Own Newsreel", by Dr. A. Mueller; "Shaw Gardens", "Davenport and Rock Island Parks", and "Chrysanthemum Show", by A. R. Bruns.

San Francisco Club

The Technical Service Committee of the Cinema Club of San Francisco is proving to be very popular with the club members. The committee functions as a panel of experts at the meetings, answering questions submitted by members. This committee, headed by Rudy Arfsten, is really giving the club members service.

At the February meeting, preceded by dinner at the Hotel Stewart, a special film treat was screened. It was the Eastman sound color film, "Eighteenth Century Life in Williamsburg, Virginia". The film has a delightful musical background and is excellent entertainment.

Philadelphia Club

Five films, including two prize winners, were screened at the February meeting of the Philadelphia Cinema Club. The prize winners were "1939 Christmas Package", by Walt Brunner, and "Country Fair", by George Pittman. Robert Henderson showed two interesting films: "Boats at Beach Haven" and "Watkins Glen". An unusually interesting film, "Scout Activities in Wartime", was shown by a representative of the Boy Scouts.



Above we see members of the Brooklyn Amateur Cine Club deeply interested in a demonstration of film editing at one of its meetings. They are really interested, for no one looked into the camera when the picture was shot by Charles H. Benjamin.



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We can't do much about the cameraman. But when it comes to film, you can always depend on Ansco's Triple S Pan Reversible to produce superb results!

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slow-motion work and outdoor movies when the light is poor.

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8mm and 16mm

TRIPLE S PAN

REVERSIBLE FILM

Aces of The Camera

(Continued from Page 94)

Back in Denver after the war Vern went to work for a company calling itself the Art-A-Craf Film Co. He was chief cameraman and lab technician. The only trouble was that the company didn't make any pictures. All they did was sell stock. Maybe they didn't ever sell very much stock, because all they paid Vern Walker was \$20.00 per week.

After he had earned \$80.00 of Art-A-Craf's money and some more on the side doing newsreel stuff, Vern found himself handling a shovel again. It seems that on that February day Denver had a 6 ft. fall of snow. The first time he had to shovel himself out, in the morning, Vern took it with good grace. But when it snowed again, and he had to shovel himself out in the afternoon also, it was too much. Having spent his entire army career on the end of a shovel he couldn't face the prospect of any unnecessary shoveling. He left for Hollywood the next morning.

In Hollywood he didn't know a soul. But he did hear that a man by the name of Morris Schlank was going to make a series of Hank Mann comedies, and that he was looking for a cameraman. Vern hurried over.

Schlank looked up from the paper he was reading and glared at the job-seeker. In tones that could be described as brisk he wanted to know, "What do you want?" When Vern told Schlank that he was a cameraman, and that he was looking for a job, the producer asked him what experience he had had. Vern sensed that this was no time to put on an act. The man's manner brooked no deviation from the truth. So he told the truth. He said that his experience had been limited entirely to newsreels, commercials, and that the only production he had ever worked on never did hit the screen because it was a stock-selling proposition.

Schlank got up from his desk. "You may be no !*/¼ *\$v* good," he told Vern, "but at least I will say one thing for you. You're the first man that has come after this job @c**/;o%xx job who didn't shoot the lb--64\$*b@csx¼ Birth of a Nation. Your hired!"

After two or three years with Schlank, Vern went with William Fox on the Western Ave. lot. There he made the first seven pictures starring Buck Jones. Then he made westerns for Leo Maloney, and Pathe serials for C. W. Patton Productions on Poverty Row. He stayed with Miscellaneous Productions on Poverty Row until he went with Mack Sennet about 1924. For Vern those were the days when he furnished his own car and camera, as well as his services, for a slight consideration; when the production quality was questionable, but the pay (what there was of it) was steady.

It was at Sennet's that he, like so many others, first became interested in trick photography. He became so inter-

ested in it in fact that he not only worked on it all day, he adopted it as a hobby for his leisure hours. Together with boating, it is still his hobby.

Vern admits that he owes his real education in trick photography to Fred Jackman with whom he went when that worthy was making "Noah's Ark" for Warners. "Fred Jackman was the real master," he says, "and he was more than generous with his help and instruction. When ever there was a problem to be solved I got all the time and equipment I needed to work it out. And that means everything."

Vern left Warner's in 1930 to freelance. He made a picture called "Ten Nights in A Barroom." To hear him tell it, it was not much of a picture. Anyway, it served to convince him that he could fill his particular little niche much better by staying in the trick end of the business.

R. K. O. took him at his word and put him in charge of their special effects department. During the intervening years he has probably created one of the most complete and compact departments of its kind in the industry. Operating under his direction is the matte department, the photographing of miniatures, optical printing, chases, transparency process work and the miniature projection process. It's a department with a reputation.

Although he perhaps is the only department head who does his own shooting, and despite the fact that he alone gets credit for the special effects in R. K. O. pictures, Vern Walker is most emphatic about giving his crew all the glory at every opportunity that presents itself. And from all accounts he is fortunate in having a highly skilled and conscientious group of people under his direction.

As a matter of policy he steers away from the purely spectacular, as such. Because of that much of the work of the department goes unnoticed by the uninitiated. Yet the results he and his crew achieve are nothing short of spectacular for the blending of skill and artistry that mark the old maestro's camera magic and "know how"; as those who are in a position to appreciate that type of work are ready to testify.

Besides creating all the illusions expected of a special effects department, Vern Walker likes to do the unexpected, also. He takes pride in the fact that his department saves the company money. For instance, when, in a certain key scene of four men playing poker, it was discovered that, in one take one of the men had left off his coat. But the error was not discovered until the set had been struck. It was only a 20 ft. flash on the screen, but it would have been an expensive retake. To avoid it, Vern, by means of animation and the superimposition process, but the man's coat back on.

On another occasion a little actress was going to become a mother. But the script didn't call for it. And in the preceding and succeeding scenes there was no sign

of it. But when, at the end of shooting, this particular scene had to be made it was so rehearsed that no profile view would be offered the camera. But when the film was printed it was very obvious that things hadn't worked out the way they had been rehearsed. So once more Vern officiated. And by superimposing a foreground shrub in the proper part of the scenery he saved the day, and the money. Cary Grant, during one of the pictures he made at R. K. O., had the misfortune, working under the lights, to acquire a large and unsightly underarm perspiration stain. It showed up badly on the screen, and what was worse, didn't catch up with the adjoining takes. So, you guessed it, Vern did a cleaning job. It's not hard to realize that a man like that is a useful person to have around a modern studio.—W. B.

Terrytoons Animates B & H Education Films

In connection with the training films on "Optical Craftsmanship" produced by the Bell & Howell Company for the United States Office of Education, a whole series of obscure but important problems will be brought out into the light and answered by means of animation photography prepared by the staff of Paul Terry, at the famous Terrytoons Studios at New Rochelle.

These animations, visualizing vital facts beyond the reach of the unaided eye, will cover such problems as:

(1) Why Newton's rings, measuring spaces of only a few one-millionths of an inch, reveal the actual curvature of lenses.

(2) Why three successive grinding tools, differing in radius by only a few one-thousandths of an inch, are needed to secure the specified rough grinding curve.

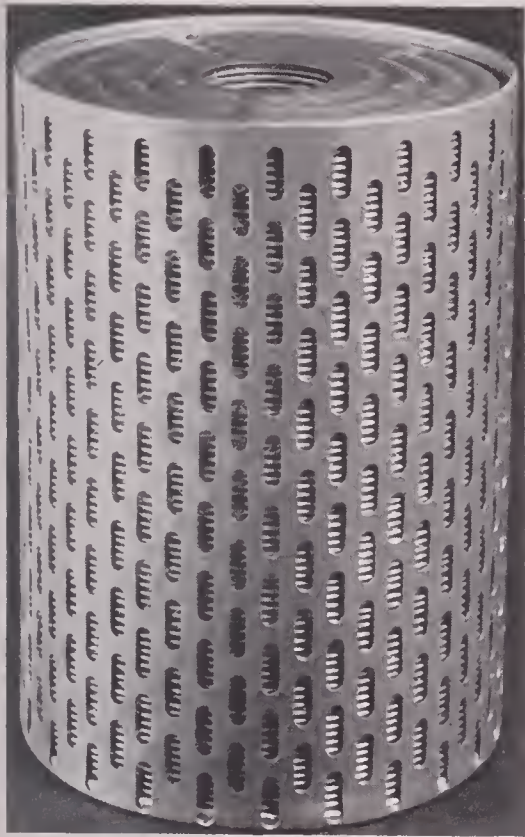
(3) Why lenses have to be turned regularly in order to assure sphericity.

(4) Why grinding tools have to be used over their entire surface, and what tool corrections have to be made when this is not done.

(5) How the geometrical axes of two lens surfaces are made to coincide to a single optical axis.

Under the supervision of J. Stanley McIntosh, visual aids specialist for the United States Office of Education, and Wm. K. Kruse, in charge of film production for Bell & Howell, animation is resorted to whenever straight photography proves inadequate. In a field like that of precision optics there are many measurements and concepts that are beyond the range of the human eye, or, in fact, beyond customary measurement devices. In all such situations, beyond the facilities of ordinary visualization, animation plays an indispensable role.

New Aircraft Hydraulic Filter Offers Industrial Applications



Combining high capacity with unusual fineness of filtration, light weight, low cost and design simplicity, a new precision proprietary filter, originated and perfected under the supervision of the engineering and research departments of Adel Precision Products Corp., Burbank, California, is now in production for hydraulic systems of large aircraft.

Designated as the "Micronic Filter" because it filters particles of 5 microns and larger, meeting the requirements of Army and Navy specifications, this new filter operates from 65° F. below Zero to 165° F. above. The filtering cartridge itself expands and contracts with the varying temperatures encountered.

The model illustrated measures 6" x 8½", weighs 2 lb. and has 3,800 sq. in. of filtering area. Rated output is 1,800 GPH at 100° F. with pressure drop of only 16 oz. filtering AN-VV-O-366a hydraulic fluid. Inlet opening is 1½" in diameter. Filtering flow may be arranged for either direction.

An automatic pressure relief is incorporated to bypass the full flow of liquid at any predetermined pressure setting, should line surges peak beyond a safe point. Filter operates in any position, however, generally accepted aircraft practice locates the 1½" opening at the bottom.

Dural alloy is used for the metal parts of the filter, although tooling is so arranged to permit the use of other alloys, such as stainless steels for the food industry and other individualized applications.

Filter also available in 2" and 4" sizes

Rephotographed from British Illustrated Weekly.



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Acclaimed by Motion Picture's top authority, National Board of Review—as the finest documentary film of 1943, "DESERT VICTORY" is now available in 16mm sound-on-film through DEVRY FILMS & LABORATORIES.

Made under fire, dramatically recording the British Eighth Army's smashing victory at El Alamein... authentically capturing the full and terrible impact of modern warfare with tanks, planes, bombs and mines, "DESERT VICTORY" demanded the best of

"For field service our cameras had to be light and rugged. I estimate that 95% of "Desert Victory" was ground through DEVRYs." — Lt. Col. MacDonald.

both men and equipment.

According to the man who directed its filming, Lt. Col. David MacDonald, Hon. A.S.C., 95 percent of "DESERT VICTORY" was filmed with world-famous DEVRY Model A 35mm. motion picture cameras.

DEVRY is proud to have served the intrepid heroes on that relentless 1,300 mile road to Tripoli, that the deeds of their comrades might be preserved *alive* for all time on unchallengeable film. DEVRY CORPORATION, 1111 Armitage Avenue, Chicago 14, Illinois.

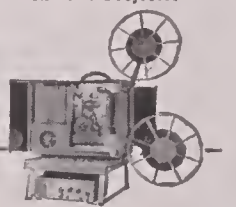


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THE BETTER WE BACK THE ATTACK WITH OUR BOND BUYING — THE SOONER THE VICTORY

with capacities of 450 GPH and 900 GPH respectively.

While present use of the Micronic Filter is in aircraft hydraulic systems, interesting applications can be seen in connection with filtering problems encountered in filtering developing and fixing solutions, especially in large studios where big quantities are used.

W.E. Presents Booklet

"Battle Talk," a booklet in picture magazine form, which highlights both the record attained by Western Electric communications equipment on the war fronts of the world and the story of that Company's production since the year before Pearl Harbor, is being distributed to more than 82,000 employees.

Planning for 16 mm.

(Continued from Page 84)

columns provided in the form given. Fig. 1 shows a sample form filled in.

The headings are self-explanatory. Each separate scene—that is, the action photographed during the interval between each start and stop of the camera—is numbered in the left-hand column. The narrow column headed *Min. Footage for Sound* denotes the footage necessary in the take to permit the full sound commentation for that scene to be added later. The footage shown in the next column is filled in immediately after the take, and must not be less than that shown in the previous column. In a picture planned along the lines recommended, it is usually more. The actual wording of the commentation is found in the next column. This, of course, will be added after the picture editing is completed. If it is necessary to have any given point in the action match with a given word in the commentation, it will help to have the words read aloud during the rehearsal and also during the take. The footage needed for a given number of average words in a commentation may be calculated roughly by allotting about three words to each foot of film ($1\frac{2}{3}$ seconds at a film speed of 24 frames per second). In the average 400-foot film unit there are approximately 40 to 50 scenes.

The final column headed *Notes* will

FILM TITLE: *HAND FORGING*

SUBJECT: *QUENCHING & HARDENING*

SCENE NO.	ACTION	MIN. FOOTAGE FOR SOUND	FOOTAGE SHOT	COMMENTATION	NOTES
21	LS Operator places steel in water, using tongs	2 $\frac{1}{2}$	3	We cool it suddenly by plunging in water.	
22	MCU Moving the piece around in the water. Inspect once or twice, & remove at end of scene	9	10 $\frac{1}{2}$	Notice that we move the piece around in the water as it cools. This prevents the formation of steam bubbles which might cause uneven cooling.	Shoot from <u>above</u>

FIG. 1.

take care of any special data that actual shooting conditions may bring about. This will also provide space for notations on retakes. In general, at least two takes should be made of every scene, and preferably three. This usually seems unnecessary to the film maker without much experience, but it is the best form of insurance against retakes which otherwise may be found lacking only after the editing is completed. Each scene should be carefully slated and, in editing, the first rough draft of the finished picture should be made from a work-print, leaving the slate identifications in the film until all final editing decisions have been made.

The shooting script from (Fig. 1) should be typed or multigraphed so that the long dimension of the sheet is horizontal. Multiple copies should be pro-

vided and copies in active use should be bound. A copy is given to the cameraman for study and actual use, a copy goes to the supervisor of production, while other copies, of course, are kept for records. Experience in this kind of shooting has shown that it is advisable, as far as possible, to take each scene in the sequence in which it is shown on the script. With large studio production facilities, it is feasible to group together all convenient scenes, regardless of their sequence. But for simple films not involving locations, less confusion will result if the scenes are shot in a straightforward order, one by one.

With this form as a guide, the specialist producer is now ready to work out his script in a logical form. Keeping in mind the desirability of a straightforward, direct approach and avoiding the pitfalls outlined, he will select a portion of his subject and proceed to fill in a trial script to ascertain its probable length. It would be well to confine a first attempt to a subject within the length of a 400-foot unit which will be found to average about fifty scenes.

In visualizing the subject for motion picture presentation, the film planner can proceed most rapidly by imagining a situation in which he is actually showing a beginner how to work with the material illustrated. He must conceive his screen audience as the embodiment of the beginner. Since most specialist teachers have had this experience, this would seem the best introduction to the method of presentation. Experience of this kind will indicate the questions that will be asked and also what parts of the subject are to be emphasized.

In planning a logical sequence of scenes with the above in mind, the arranger should always keep before him the inherent flexibility of the motion picture camera as to *viewpoint*. The camera brings to the entire audience the visual impression gained by a single individual who must be imagined as receiving the instruction. Just as this individual would have complete freedom to look at the subject closely, or to gain an impression of the whole thing by stepping back, so the camera can emphasize or generalize by means of the long shot and the close-up. As the

(Continued on Page 102)

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Proper Placing of Reflectors

(Continued from Page 85)

The small camera with the motor and batteries to run it will weigh less than thirty pounds at the most, taking up little more space than an average suitcase.

Today when we see the beautiful color results on the screen from the sixteen mm. kodachrome films enlarged by Technicolor I wish I had been lucky enough to have had one with me for at the end of our working day we would not have been so worn out.

All this brought me to one conclusion, and knowing that color is the future and that sixteen mm. is now perfectly enlarged, the little camera has grown up to take its place alongside the thirty-five mm. studio camera. In the future should I go on any more expeditions or for stock material for myself, my equipment will include a modern sixteen mm. complete.

While we are on the subject of sixteen mm. cameras, one of the questions frequently asked by owners of small cameras is "How and where do I use the reflectors?" This is very simple as shown in Figures 1 and 2. First let us agree that in color the sunlight should be shining over one of the photographer's shoulders so as to illuminate at least 75% of what you are photographing. Should the remaining 25% of background be too dark, then reflect some light (D) into it or it will be underexposed and out of balance. If the face being lighted with three-quarter light leaves black shadows on the off side, illuminate it very, very little with a soft reflector (B) because the shadows are what make the modeling, and shadows in color give beautiful effects.

Color pictures, can be made without reflectors at all and with very good results. You can plan your day's work so you can shift each set-up so that the sun will always be coming from the same angle. I used this method very successfully in a full length eighteen-hundred feet sixteen mm. Kodachrome of the Dan and Ginger Lamb picture of their trip in a small canoe from Balboa, California, to the Panama Canal. Mrs. Lamb could not stand a reflector so we discarded them entirely and by using the shadows to do the modeling as well as to hold down the exposure combined with a few Harrison color filters which enabled me to hold the film at the same color throughout the day, we had very fine results and later on when the film was projected at the White House during a personal appearance by the Lambs, the President complimented the results very highly.

I am sure should the reader wish to know more about these filters that help you hold the same color in your film from sun-up to sun-down the editor of the American Cinematographer will be glad to enlighten you further on the subject.

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I D E A S

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Titles Tell the Story

(Continued from Page 86)

Most advanced amateurs prefer to do their titling on "positive" film, and for a very good reason . . . in fact for three very good reasons: First, economy; there is no other type of film more economical to use, bar none. Secondly, high contrast; the "positive" emulsion is extremely contrasty and has fine grain, making it well suited to title making, where these qualities are important. Last, but not least, convenience; the use of this film permits all lettering to be done in black ink on white cards, the film being developed negatively, as is the usual procedure, resulting on the screen as WHITE letters on BLACK. It is the usual custom for the cine fan to process "positive" film himself, in his own darkroom, since it is easily managed. Any person already adept at developing still pictures will have little difficulty in this respect . . . following the same technique, and using the same chemicals. The inexperienced will find it advisable to learn this basic knowledge first, by studying up on the fundamentals of the

darkroom procedure. Usually, the film is handled in short lengths only, being spooled off the reel as needed, and developed in the length of one or two titles at a time. Those not caring to process their own, will find many independent laboratories who will develop the entire reel at a very nominal fee.

It isn't necessary to be an artist to make attractive titles. Magazine illustrations, sketches, travel folders, etc., may be used or traced as title suggestions. Indeed, many filmers find title making more fascinating and enjoyable than regular movie making! Keep your titles "matched" . . . that is, use the same style and same background throughout any one film. This is important to good showmanship. Go to it now, and here's to . . . BETTER TITLING!

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Let's Be Efficient

(Continued from Page 88)

what is needed in these varied fields, so can the present units supply what is needed today.

These wartime needs and purposes could be discovered and there are enough patriotic, simple men and women to do the digging, the liaison job, and, it seems to me, that it all boils down to a few dozen men and women who first dig up the most important questions and then keep an eye on a production of the answers.

They would not be stars, large or small, from either side of the camera. They would not have to be intimates of the great, the successful. You could junk the stars, for the duration, if you could find a few of these simple, obstinate people.



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Planning for 16 mm.

(Continued from Page 100)

individual's attention is constantly directed to the various details, the camera may also record a constant variety of shots as the explanation proceeds.

This will be found a satisfactory method of estimating lengths of scenes, changes of viewpoint, and the logical progress of one scene to the next, which is called continuity. No claim is made that this planning process will give an automatic knowledge of the scope and limitations of the camera work itself, for the planner must consult his cameraman at all times and on all points to find out what the camera *can* and *cannot* do. In general, however, he will be agreeably surprised to learn that the camera can show plainly everything a beginner can see, and he will find, in addition, that the camera can often go beyond this and can present things that are ordinarily unseen, even to abstract conceptions.

In brief, experience indicates that the teacher or expert who is to guide the production of a training film should give his particular attention to the following points:

- (1) Do not omit any important step in building up a concept, no matter how simple.
- (2) Do not write commentation that is overextended.
- (3) Have the visual demonstration coincide in all cases with the sound-track explanation.
- (4) Show no important action that is unexplained, or no explanation unaccompanied by action.
- (5) Time the delivery of the commentation carefully in advance while mentally or actually rehearsing the action.
- (6) Take full advantage of the concentrating power of the camera through the use of close-ups.
- (7) Consider the audience as an individual who is to receive instructions through the film in the same way as a beginner.

Report from Russia

(Continued from Page 83)

the Dnieper, the steppes of the Ukraine and on the cliffs of the Crimean shores.

Our camera conference is now over, and our cameramen are returning to life in the trenches under constant fire in freezing temperatures. They are returning to sleepless nights and earth-rocking barrages at dawn, which prepare the way for fresh victories. This time, however, we separated in better spirits than ever before because complete victory may already be discerned. A bitter road yet remains to be travelled, but through the glare of burning villages and despite fresh sacrifices, we shall attain our end—victory, for which we have fought so long.

Serials Cut Absenteeism

Ever since the "Perils of Pauline," serial film has been cutting absenteeism. For many years it brought people back to the theaters regularly, to see the next breath-taking chapter. Now it is up to "Flash Gordon," along with "Riders of Death Valley" and half a hundred more modern serials, to bring the war workers back to work more regularly in the plants that are making recess movies a part of their regular personnel activities.

The serials are really doing the job. In the plants of Bell & Howell, well known manufacturers of motion picture equipment and optical devices, the serials outshow any other type of film. In fact, on the two days a week the serials are shown, the movie audience is double that which turns out for any other film, and the factory theater is crowded far beyond the door.

The serials are shown on Mondays and Tuesdays, usually the worst days of the week with regard to absenteeism. In fact, the absenteeism on these two days has been reduced by 14% in comparison with a 10-week average before the serials were introduced.

The Bell & Howell Company has its own Film Library which is available also to other war plants. An exclusive feature of this film service is that all serials, since the outbreak of the war, are marked so that the chapter can be split over two days showing, allowing not more than 10 minutes of film for each break period.

OWI Films With DeVry

DeVry Films & Laboratories, a subsidiary of DeVry Corporation, has been named a depository for Office of War Information films, which are now available. It is also announced that the 16mm. film-on-sound edition of the British war epic "Desert Victory" is available through DeVry Films & Laboratories.

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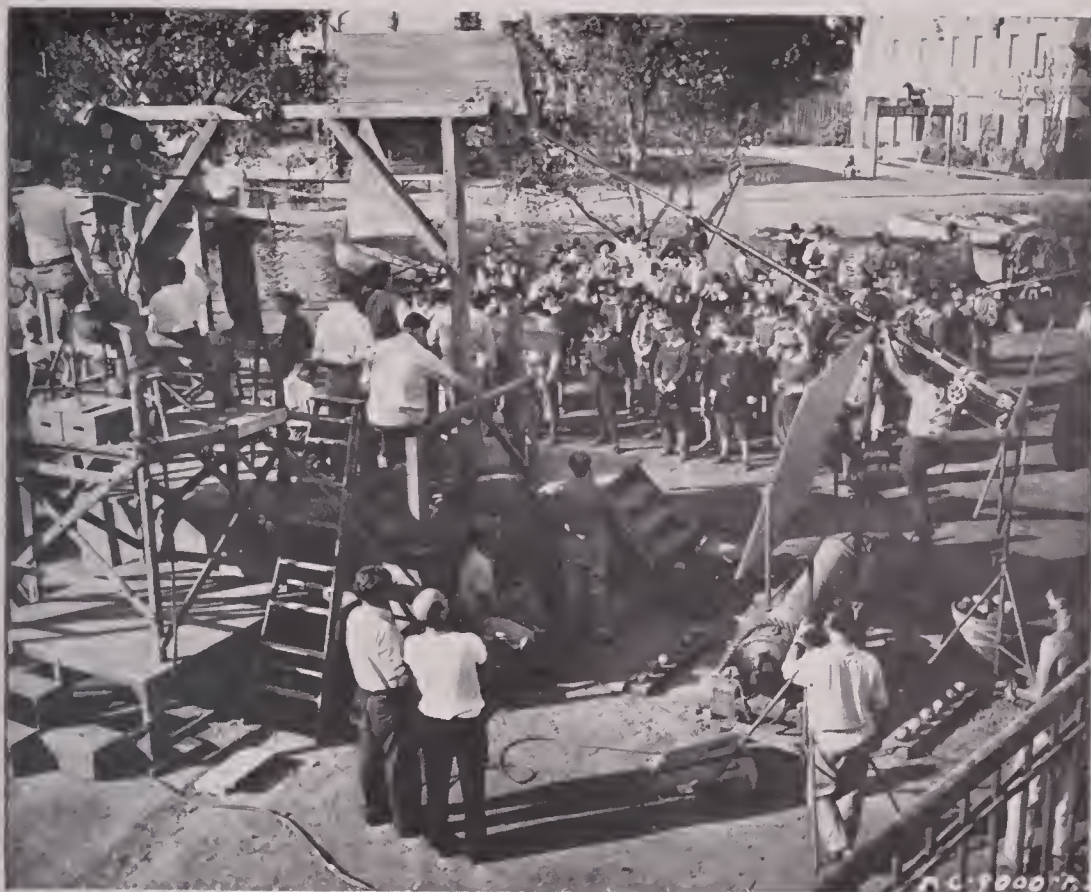
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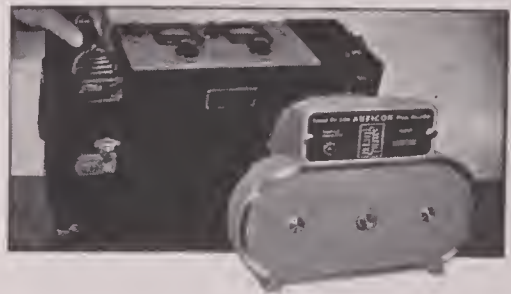
Behind the scenes during the filming of "Knickerbocker Holiday", in which Nelson Eddy portrays a New Amsterdam printer in the romantic comedy with music, which is being released by United Artists. Camera crew filming the picture are Philip Tannura, Director of Photography; Jack Russell, operator, and Sam Rosen, assistant. Critics have given high praise to the cinematography in this film.

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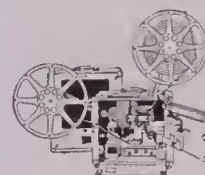


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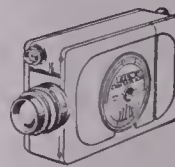
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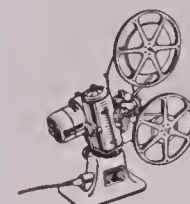
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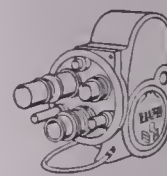
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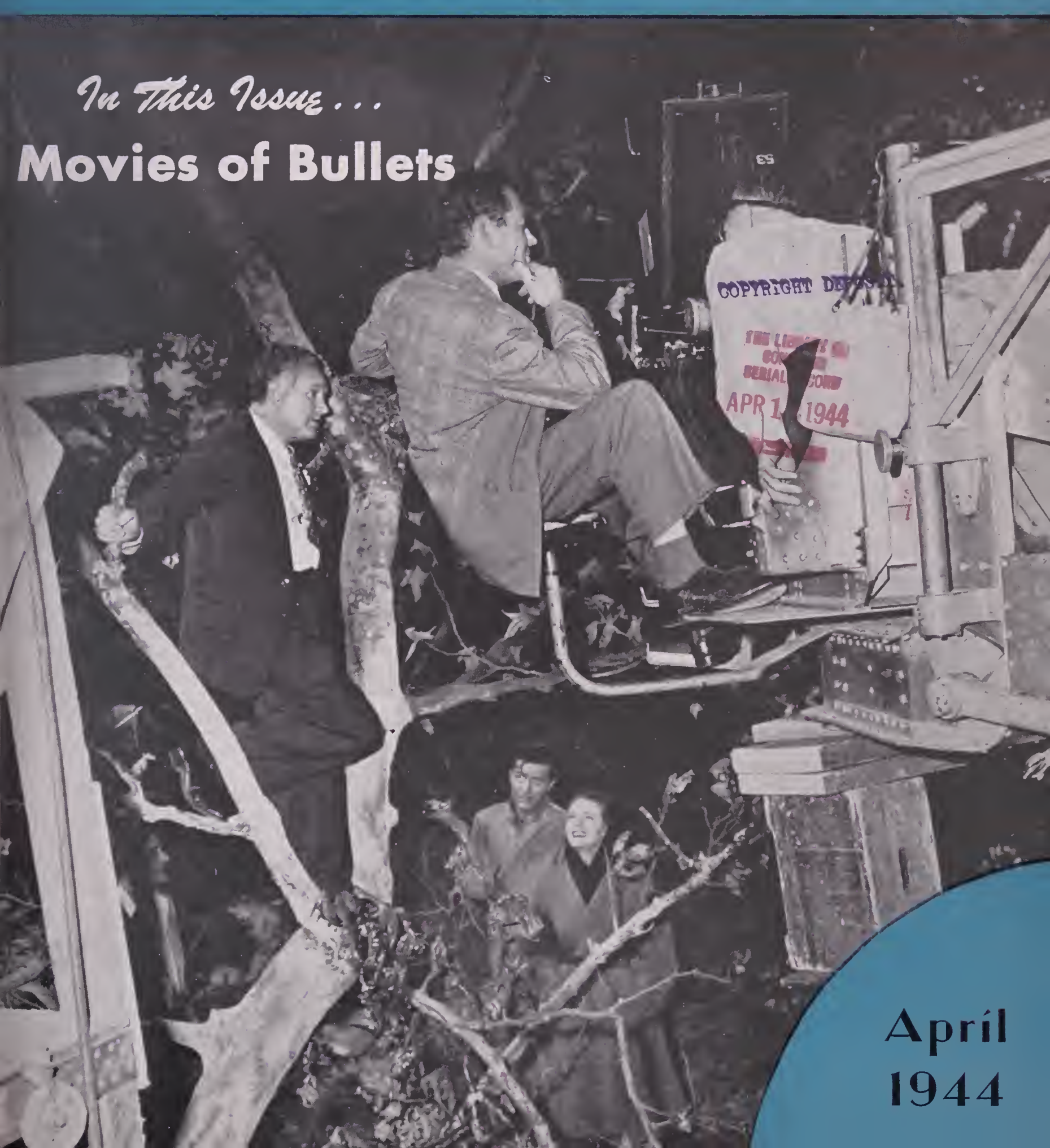
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Movies of Bullets



April
1944



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2. Eyemo goes aloft. Cameraman climbs to bird's-eye view on observation post in Tobruk and hoists his equipment up after him.

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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

APRIL, 1944

NO. 4

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*Mother, which one shall we name **ADEL**?*

Lucky little American! In your world the all-consuming problem of the moment may be the name of a new pet — not how to trick a Nazi overlord or get a crust of bread. It's to keep that world, and to bring back the birthright of millions of children elsewhere, that American men and machines are fighting on every battle front. ☆ ☆ Making their jobs easier and safer are the many important aviation products made by ADEL, all distinguished by their *Design Simplicity* and dependability. ADEL originally planned to make cinematographic equipment. However, a unique lens focusing device became a dual carburetor control which, in turn, led to development of other aircraft products. ADEL's peacetime plans include advanced cinematographic equipment, made with the engineering skills that created ADEL's international acceptance in aviation.



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ADEL PRECISION PRODUCTS CORP.
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BUY BONDS FOR A FREE AMERICA

Movies of Bullets

By R. H. BAILEY

WALLACE BEERY'S 1932-made movie, "Hell Divers," is more responsible than any other one factor for the design and principles of the present aerial machine gun movie camera.

It happened when some officials of the Brazilian government saw the Beery show, in which U. S. Navy gunners were shown in training, using a camera machine gun of the early vintage. Beery supplied the comic relief by managing to photograph only sea gulls, whereas the infallible hero always managed to show direct hits on "enemy" planes.

The Brazilians were so struck with the untold possibilities of this device that they instructed a Brazilian purchasing mission, then in the United States, to get in touch with the Fairchild Camera & Instrument Corp., which supplied Brazil with aerial cameras. This mission asked Fairchild if it were possible to make a similar kind of camera gun for them. Incidentally, the Navy camera machine gun was restricted at the time, making an independent development necessary.

A Fairchild engineer, John P. Gaty, set about making a new design. It was completed in 60 days and was destined to foreshadow and influence all U. S. Army and Navy standard equipment in this line. This model, like earlier cameras of the type, simulated an actual machine gun, for better training practice—or so it was thought at the time—but it used the more economical 16-millimeter film instead of 32mm., it shot at the same rate of a regular machine gun (16 shots per second), and it had an interchangeable, removable film magazine. In order to determine whether proper sighting was used, each photo was marked with a cross, the center of which indicated an optical line of flight which would be taken by a real bullet from a regular gun.

There were other far-reaching improvements and innovations, the Brazilians were pleased, and shortly the idea caught on like wild-fire and the camera was being sold to every country in the world with an air force, except Germany and France, including the U. S.

From this famous model, called the CG-16, the Americans have developed scientific gunnery techniques which have made us famous. The Navy specified some changes in the design and thus was inaugurated the first fixed gun (the Mark 6) as well as a unit less sights for wing mountings in a streamlined case (the Mark 7). The Army versions

were known as the H-1, H-2 and H-3, variations of the Mark-6 and 7.

In 1938 the fixed gun changed its shape radically, paving the way for the Fairchild Type, in use on U. S. air forces planes now. Our armament designers felt there was no point in continuing to have the camera look like a machine gun, because, now that it was being operated by remote control, the gun suggestion was valueless to the pilot. The armament laboratory at Wright Field wrote detailed specifications for a new model, severely limited in size and weight, and the present camera, about the size of a cigar box and weighing 3½ pounds loaded, came out of the Fairchild plants in New York as the result. This time, incidentally, the designer was Clinton B. Gaty, now a lieutenant-colonel in the army, and a brother of the original Fairchild designer.

Today's pint-sized aerial gun camera (other aerial cameras, for reconnaissance and mapping photos weigh from 40 to 200 pounds), is a model of compactness. Smaller than a home movie camera, it is operated successfully in temperatures ranging from 160 degrees above zero to 65 degrees below. The body contains the shutter, the motor, and the film magazine, loaded with a maximum 50-foot roll of 16-millimeter film, allowing 2,000 exposures. A reset knob can vary the speed from 16 to 32 or 64 frames a second. A heater unit, controlled by a thermostat, operates at between 40 and 90 degrees—a unit very important for high-altitude and low-temperature photography.

Mounted either in the wing, in the fuselage, or behind the gunsight, the camera is wired into the plane power source so that when the gun trigger switches are closed the camera is simultaneously operated. Further, the camera is so mounted that its lens points in the same direction as the machine gun and "hits" the enemy plane in exactly the same spot. When the guns stop firing the camera continues to operate three seconds longer to photograph the last of the stream of bullets and register final hits, this is accomplished by a timer unit called an over-run device.

The importance of the part the new camera will play in the war is evident from a recent statement by a high military authority to the effect that approximately 85 per cent of everything we know about the enemy is due to photographic reconnaissance. Photographs taken from the air over enemy territory record the locations of enemy in-

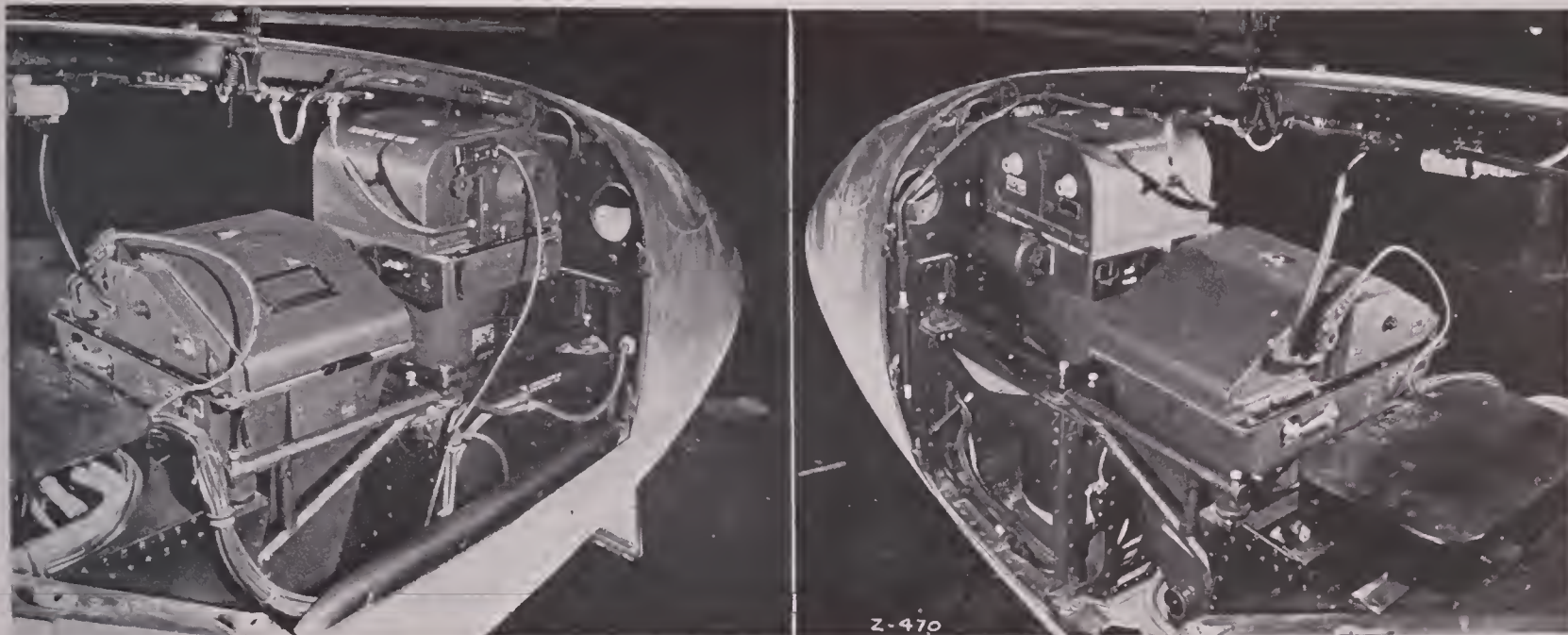


Here is the aerial movie gun camera developed by the Fairchild Camera and Instrument Corporation.

stallations so that our forces know how to deal with the defenses of positions they plan to attack. This ability to know in advance what conditions must be met has resulted in the saving of thousands of lives.

Also of great importance to the military leaders are the photographic reconnaissance pictures taken after bombing raids to show the extent of damage done to the enemy's cities, industrial establishments and military installations. Without pictures taken from the air we would not have known the extent of our success in the big bombing of Truk. Neither would our forces have known when the Jap held naval base was most filled with important shipping.

Sometime previous to the start of the present war Nazi General Werner Von Fritsch stated, "The military organization with the best aerial photo reconnaissance will win the next war." It is now evident that the Allies are winning this war, and it is quite evident that American photographic equipment, American photographers and American plane builders are playing a great part in the coming victory.



Above, two views of the nose of the Lightning F-5, fully equipped for aerial observation. Below is the new camera ship as she looks in the air. (Photos approved by War Department.)

Camera Planes Win Wars

BRISTLING with guns, the Lightning P-38 has won the unqualified respect of the Axis on all fronts as the world's most versatile fighting craft. Now, armed with cameras instead of cannon, a new version of the P-38 is winning battles in still another role—as the eyes of the Army Air Forces.

This Lightning was chosen for its speed and maneuverability as the spearhead of the AAF's experiments in high-speed reconnaissance.

Its effectiveness as an aerial weapon established, the War Department and the Lockheed Aircraft Corporation now can announce details of the photo plane, known as the Lightning F-5.

In wide use on all combat fronts, the photo pilots are streaking across hostile skies on one of the war's most dangerous missions—that of finding out what the enemy is doing and what we have done to the enemy.

Commenting recently on the important work of the recon planes, Gen. H. H. Arnold, chief of the U. S. Army Air Forces, declared that in some circumstances a P-38 with cameras had rendered more important service than a P-38 with guns. "Our photo-reconnaissance pilots are instructed," he said, "to fly on the theory that fighter planes win battles, while camera planes win wars."

Photo reconnaissance pilots, labelled Focus Cats, must get to their objectives, eluding enemy pursuit planes, wade through flak to take their pictures, and then get back to base in the shortest possible time, without benefit of guns to fight off attackers. They must be able to soar to stratosphere heights for some pictures; dive to roof-top levels for others. The F-5 measures up to all of the requirements of the job.

Stripped of its armament, the Light-

ning F-5 is several hundred pounds lighter than its fighter counterpart and is capable of an added 10 miles per hour speed with greatly improved flight characteristics. It carries a battery of charting and reconnaissance cameras with lens varying from 6 inches to 40 inches. They are controlled by an electrical impulse unit and may be operated singly or collectively.

Latest device in use by the Focus Cats is a shutterless continuous-strip camera. Used on low level flights, it takes not a series of snaps but one long, uninterrupted flow of pictures. The film winds past a narrow slit in the camera, its speed synchronized to the speed and altitude of the plane. Flying at less than 200 feet, below anti-aircraft range, the Lockheed F-5 can photograph large areas and, with its intense speed, get away before enemy gunners can adjust their aim.

The job of a recon pilot requires a tremendous amount of skill. The pilot must know navigation as the navigator

on a bomber knows it. He must be able to do all of the tricks that a fighter pilot can do with a plane and then some, since he is unarmed. He must be able to make his run on an objective with the same accuracy that a bomber approaches a target. Flying high altitude reconnaissance, an objective seen at 30,000 feet offers a small target at which to aim a camera.

The job of high altitude reconnaissance presents certain other problems, too. There is the question of temperature, for even at the equator, at a height of 30,000 feet, the mercury drops to almost 50 below zero. Accordingly, cameras and film used for high altitude work are kept warm in heated compartments, protecting the cameras from the extreme cold.

The problem of haze and overcast is overcome by the use of special light filters and by using infra-red film but clouds may necessitate diving through a hole in them to catch a fleeting snapshot of the objectives.

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Aces of the Camera

KARL FREUND, A.S.C.

By WALLY BOSCO

TO really write the story of Karl Freund, A. S. C., would be to all intents and purposes, to write the history of the development of the motion picture artistically and technically. To speak of his talents would be to read a roster of those abilities inimical to picture making. Laboratory technician, sound engineer, color expert, writer, director and inventor, he presides at the camera with authority and finesse. The complete understanding that is his of all the elements of the motion picture gives his camera work a polish and artistry that is peculiarly his own. "The Good Earth," which a few years ago won for his home studio a batch of Oscars as the best picture of that year, brought Karl one of the gold statuettes for best photography. But all his photography is good. And students of the art never miss a picture that he has photographed because even if the story fails to please them they can always sit back and enjoy an exhibition of cinematography at its best.

A case in point was "Du Barry was a Lady," which, for even the most ardent Skelton enthusiasts, fell pretty far short of being entertaining. The critics disposed of it in short order, but in many

instances found space to speak with enthusiasm about the color photography, which, to quote one reviewer, "... should be seen by anyone interested in the use of color photography by one of the really great cameramen." And who goes on to say, "Freund concentrates on getting the utmost out of the textures of the costumes and settings... This is especially true where he reproduces the silks and satins, and the wonderful powdered wigs, in a manner which inevitably reminds us of the work of Rosalind Main-got in the world of the monochrome exhibition picture. The portraits of Lucille Ball are similarly delightful in their pink-and-white porcelain style."

His "Blossoms in the Dust," done in '41 with W. H. Green of Technicolor, still ranks as one of the finest color films produced. "Tortilla Flat," in black-and-white, was not only a masterpiece of pictorial composition but the camera contributed enormously to the excellence of the picture as a whole by its subtle mood interpretations and creation of atmosphere.

One could go on and on. It is impossible to write about Karl Freund the man without writing about his pictures, because it is only through this medium in

which he is so much the master that we can get an insight into the multifaceted nature of this talented Czechoslovakian.

His pictures started making cinematographic history a long time ago and startled a movie-conscious world into a new and higher estimate of the motion picture as an artistic and dramatic medium. "The Last Laugh," starring Emil Jannings, which he made in 1925 in Berlin, created a new standard of camera excellence. In this picture the moving camera, bringing to the screen a more flexible, more sensitive interpretation, was used for the first time. And, because of the European practice of giving adequate credit to the cameraman for the contribution he has so obviously made to a picture's success, Karl Freund had made a name for himself. A name that was further enhanced by his work on such pictures as "Metropolis" and "Berlin."

When the film, "Berlin, The Symphony of a City," appeared on the screens it was hailed as a sensation. It is still a sensation; a picture of such consummate artistry it is ageless, and is preserved as a distinguished work of art by the Museum of Modern Art in New York.

"Berlin," a picture without stars, with no paid actors or actresses, using for the first time highly sensitized film for the shooting of street scenes at night without the aid of additional light, was made as a result of a provision Karl insisted be put in his contract when he took over the European production for Fox.

It happened this way. By dint of hard work he had achieved a reputation, but with the Fox contract he foresaw the possibility of being saddled with the responsibility for a lot of low budget "quota" pictures that would do nothing to enhance that reputation. The opportunity to make "Berlin" was the condition on which he signed the contract. He felt sure that no matter what else he had to make he could redeem himself with "Berlin." And he was right.

Some of the details incident to the story, and the making of that great picture are interesting to recall. It took over a year to make; there were no principals or characters in the accepted sense; no one who appeared in the picture knew that he was being photographed. The story concerned itself with a day in the life of a city, and was conceived and created in much the same way that a composer might write a symphony. It began with the first stirrings of life in a great city, and rose with increasing tempo to a crescendo of activity as by mid-day the pulse of city life beat most strongly. It portrayed vividly the complex, competing aims and ambitions of humanity, contrasting love and hate, greed and charity, virtue and vice. With hidden cameras, which sometimes waited days for the right shot, it provided glimpses into the most intimate lives in every strata of a city's society; the banker and stockbroker with their manipulations, ringing phones and ticker-tape; the prostitute with her sidewalk undulations; the thug in his underworld hangout.

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More About Reflectors

By GLENN R. KERSHNER, A. S. C.

BEING interested in 16mm. cameras and amateurs, I like to watch them. Often I see interesting—and sometimes very foolish—things.

Last Sunday, for example, while I was horse-back riding along the beach I noticed a young couple with a 16 mm. camera. The girl was beautiful, with a fine figure, large brown eyes, a wealth of golden hair and a smile worth pausing to see.

All this the excited young man was trying to capture on film. I watched him move in for a big head close-up. He posed her this way and that, each time taking a few feet of film. Watching her through his view-finder, he finally pressed the lever and as the camera clicked he told her what to do.

"A little farther around to your left . . . a little more . . . more."

He watched the bright sunlight creep over her nose until it was full on her cheeks. He smiled. That was what he wanted.

"Hold it, June," he exclaimed. "That's beautiful."

But before he had finished speaking her eyes closed, her head dropped forward and big tears fell to the sand.

"Hang it all, June, you spoiled a good shot," he shouted.

Shading her eyes, she replied, "I couldn't help it. The glare of that sun

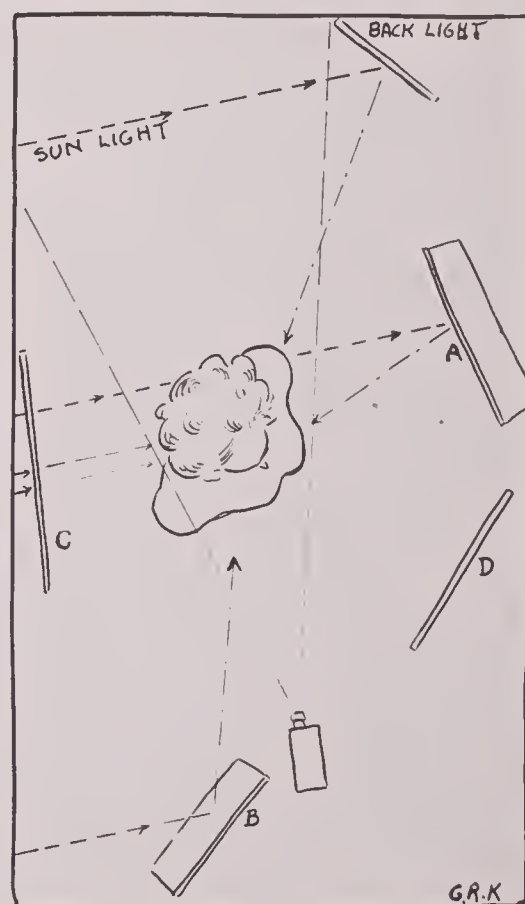
was simply terrible."

I had watched long enough, and as I rode away the young man was still trying to persuade the girl to repeat the same foolish pose; a pose which no camera enthusiast should ever attempt. Looking into the sun, into an arc light, or even into an open incandescent spot light can do more damage to the eyes than nature can repair in months. It is even worse with children and babies, for it may ruin their eyes for an entire lifetime.

Film today is so fast that this picture, with the same lighting effect, could have been made with the aid of a few small reflectors and stands. With these the young man could have posed the girl with her back to the sun, and had her look into the harmless sky for as long as he desired.

I could see that the young man was trying to get sort of a semi-night effect with the splotch of sunlight falling on the cheek next to the camera. To get that same effect he could have placed a *hard* reflector (silver foil) well above her head and a little back of her (see A in illustration), so that the reflected light will duplicate the original sunlight effect.

If there are no white clouds in the sky to give some reflected light for detail of her face, place a *soft* reflector (gold foil) at head height near the camera (B). If too much light, set it farther away from



her—have just enough light to see the detail.

Taking time to study the picture, he should by now realize that the direct sun light on her back and hair is too *hot*. This can be remedied easily by suspending a piece of mosquito netting or thin white cloth (C) between the girl and the sun, but be sure to place the frame holding it so that it will not cast an unwanted shadow into the picture.

(Continued on Page 128)

The Camera and Projector Of Tomorrow

By X. TOLL

AFTER the fighting (note that we do not say "after the war") manufacturers of cine cameras and projectors will be faced with two possibilities:

a—Carry on with the models made during the war, which are, in many instances, the pre-war models with a few alterations or improvements,

b—Scrap obsolete models, and plan something really new, taking care of their clients ultimate needs and desires. After all, if the client is, to the manufacturer's point of view, often wrong, it is his money which buys the goods.

With this in view, we hope that the following remarks will be found of interest, reflecting the view of an amateur. Our qualifications are: We have been a constant amateur cine-bug from 1928. We used or investigated the following makes of cameras: Pathé 9.5, Kodak and Bell & Howell 8, Kodak 16 Standard-16, Special, Magazine, Bell & Howell 16-D, Bowlex 16, Moviekon 16, Sept 35mm. Amongst projectors: Pathé, Kodaks, Bell & Howell, Ampro, Nizo, etc., either sound or silent.

THE CAMERA

1—Camera to be improved upon, as funds permit, or a camera with most improvements already included?

We do not quite agree with a scheme under which improvements could be added from time to time, as funds permit, though, at a first glance, it appears the right solution to many. Several arrangements could very well be incorporated, without great difficulty and super extra cost, by the manufacturers. The extra expenditures should come when special extra accessories are desired, such as extra lenses, filters, etc.

2—Turret head, sliding holder.

A turret head or sliding lens holder is definitely a convenience. Found that often 2 lenses are sufficient. True if one can accommodate more lenses, one can hold less. The revolving 3 lenses turrets are at times cumbersome. Personally would prefer a horizontal or vertical sliding lens holder to hold 2, perhaps three lenses. This would help for the centering and focussing through a sort of special side viewer, refer to 4 further.

3—Wind back and motor.

A wind back is a necessity, but same should be built in such a way that the motor could be disengaged or declutched to allow back rewinding as much as desired. Why not a camera with the spring motor as a separate unit which could be removed easily for adjustments, oiling, change if necessary as in the "Sept" for

instance? Regarding the length: one full winging of the motor should take a minimum of 50' for the 16 as well as the 8, or at least 25' for the latter. With the removable motor a special electric unit could be had, if desired, and a hand crank.

4—Centering, correction of parrallax.

With a lens holder allowing the sliding of the lenses, it should be an easy matter to have a viewer permitting one to check the centering of the lens at the off known distance from the center, with cross lines in the center of the viewer. It could have a ground glass exactly at the distance from lens to filter, and a sliding magnifying tube for extra critical focussing.

For the general purpose viewfinder, we would rather favor an open viewer, allowing quick adjustment for lenses of various focal lengths. Such a viewer permits greater latitude as one may see what happens on the sides of the scene being shot, useful if someone or an object comes across the field (motor car, people, etc.) to be left out.

5—Spools—magazines.

We like the ease of loading with magazines, but definitely hate paying more for them than spools. It seems to us that it should be an easy matter to arrange, if the manufacturers would only make a thicker magazine which could hold and be loaded with the regular 50' or 100' spools (16mm.) Would see them with sprockets good for sound or silent films, as at times stock with perforations on one side only are procurable, when the regular is not.

6—Speeds.

Speeds should be accurate from the first picture. One should be able to have all the gamut 8-16-24-32 and 64. Single frame at the correct chosen speed. Starting button or lever with locking arrangement. Possibility of using a cable release, same allows the use of delayed action gadgets, if not incorporated in the camera. How often on hiking trips had we to run in the picture to give a scale and movement. We lost also many good pictures by handing the camera to a good still photographer, who immediately started moving the camera as if it was a jitterbug partner!

7—Footage indicator, length of film exposed.

Definitely we would like to have either an audible or visual arrangement to know, during the take, the length of film exposed, and more important, how many feet are left, this particularly when the 45-48 footage (16mm.) is reached. It

gives leeway to change the magazine or insert a new reel before ending the reel. The footage indicator should be accurate, working correctly also when backwinding.

8—Adjustable shutter.

A shutter with an adjustable opening should be included. It would allow the possibility of reducing, to a correct known ratio, the shutter opening. This would allow increasing the speed of the take (obturation) without change in the motor speed, giving thus extra versatility. An automatic dissolving shutter, timed for 1, 2, 3 seconds, should not be such a difficult convenience to have.

9—Frame for Exposure Charts, Photo-Cell.

We seldom use exposure charts. The conditions vary so greatly at any moment—with the latitude, altitude, percentage of humidity in the air, period of the year, passing clouds, etc., that they can hardly be relied upon, specially when using color films. We recommend having a good photo-cell, independent from the camera. However, a frame for inserting the charts, for general work, or for memo sheets, would be an advantage.

10—Case—Metal parts.

A strong, light, conventional case is necessary. Metal parts, if any, to be impervious to sea water, humidity, etc. "Conventional" as odd shapes are not always convenient to handle, to attach on the tripod or the title board, and are, at times, too conspicuous.

11—Possible extras.

May we add also as accessories or in the unit. Prism to take pictures sideways, quite useful at times for shots of natives and friends alike. A reflex type viewer to take low shots coupled with a water or spirit level. A sunshade to hold various filters or combinations of filters. To standardize the most possible, particularly the screw base of the lenses of different makes and . . . we suppose we overlooked some highly important gadget which is used perhaps once in a lifetime!

THE PROJECTOR

1—Elimination of noise.

The projector should be silent as an Angel. This could certainly be attained by an intelligent use of plastic gears and housing, elimination or damping of all vibrations, etc. A glass window protecting the gate and sprockets, would allow the checking of the movement, with fluorescent inner paint of the moving sprockets and gate. This would have an extra advantage in keeping dust away.

2—Ventilation and lamp.

The lamp . . . we recall the difficulties we had to secure even 200 watt lamps in Australia! For ordinary home projectors could it not be possible to use motorcar head lamps with an adequate resistance or transformer? When bulbs are not procurable, perhaps to have the possibility of adjusting easily a small carbon arc. Evidently all escape of light should be impossible. Lamps to be easily removed from the lamp house and base.

(Continued on Page 128)



Left, Hal Mohr, A.S.C., receiving Academy Award for Color Cinematography on "Phantom of the Opera". Above, W. Howard Green, A.S.C., who shared honors with Mohr. Right, Arthur Miller, A.S.C., being presented with Award for best black-and-white cinematography of 1943. Oh, yes, it is Rosalind Russell presenting the "Oscars".



Academy Award Winners

ARTHUR MILLER, A. S. C., Hal Mohr, A.S.C., and W. Howard Green, A.S.C., carried away the cinematographic honors for 1943 by winning the famed Awards of Merit of the Academy of Motion Picture Arts and Science for the best black-and-white and the best color cinematography of the year at the Academy's 16th Annual Awards Presentation on the evening of March 2nd.

Miller won for his photography on "The Song of Bernadette," which he photographed for 20th Century-Fox. Mohr and Green shared the honors for color cinematography for their work on Universal's "The Phantom of the Opera." Winning Academy Awards for excellence in cinematography was not new to any of this trio, for all of them have won "Oscars" before.

Special Technical Achievement Awards also were won by Farciot Edouart, A.S.C., by Charles G. Clarke, A.S.C., and by the Photo Products Department of E. I. Dupont de Nemours & Company. Following are the specific Technical Achievement Awards as designated by the Academy:

Award in Class II (Plaque)

TO: FARCIOT EDOUART, EARL MORGAN, BARTON THOMPSON AND THE PARAMOUNT ENGINEERING AND TRANSPARENCY DEPARTMENTS FOR THE DEVELOPMENT

OPMENT AND PRACTICAL APPLICATION TO MOTION PICTURE PRODUCTION OF A METHOD OF DUPLICATING AND ENLARGING NATURAL COLOR PHOTOGRAPHS, TRANSFERRING THE IMAGE EMULSIONS TO GLASS PLATES AND PROJECTING THESE SLIDES BY AN ESPECIALLY DESIGNED STEREOPTICON EQUIPMENT.

This whole process from the utilization of the original color photograph to the projection of its corrected duplicate on a translucent screen has provided a successful, accurate and quick method of obtaining a relatively inexpensive natural color background which matches the foreground set. This results in natural color backgrounds projected with sufficient illumination for motion picture color photography, the use of which increases the scope of stereopticon backgrounds, reduces production costs and gives a more natural and improved quality on the screen.

TO: CHARLES GALLOWAY CLARKE AND THE 20TH CENTURY-FOX CAMERA DEPARTMENT FOR THE DEVELOPMENT AND PRACTICAL APPLICATION OF A DEVICE FOR COMPOSING ARTIFICIAL CLOUDS INTO MOTION PICTURE SCENES DURING PRODUCTION PHOTOGRAPHY.

This device provides a simple and inexpensive method of incorporating artificial clouds into an outdoor scene. The simplicity of the device and the fact that it allows action to take place above the horizon permits a greater freedom of action than is possible by the use of other methods intended for the same purpose. The result is an achievement of artistic and photographic excellence which might not otherwise be obtained.

TO: FARCIOT EDOUART AND THE PARAMOUNT TRANSPARENCY DEPARTMENT FOR THE AUTOMATIC ELECTRIC TRANSPARENCY CUEING TIMER.

This cueing timer, being interlocked into the camera projector system necessary for photographing transparency process shots, can be pre-set to permit exact cueing and automatic electric operation of special effects for matching to the split frame of foreground action.

TO: PHOTO PRODUCTS DEPARTMENT, E. I. DUPONT DE NEMOURS & CO., INC., FOR THE DEVELOPMENT OF FINE GRAIN MOTION PICTURE FILMS.

The development of fine grain motion picture films has made possible a significant improvement in the quality of sound and picture as heard and seen in the theatre. The physical characteristics of these films are such that the previously inherent film noise has been substantially reduced. This has made possible a more pleasing and faithful reproduction of the original sound and an enhancement of the quality and entertainment value of the finished picture.

Don't Forget Television

By JAMES LEAMAN

I STARTLED one of my friends, a producer of 16mm. industrial films (now war work exclusively) by suggesting that he'd better learn what he could about television right now because he might find himself in need of a post-war market, and I felt that television was a "natural" for the industrial film producer.

While the idea was a fresh one to him he, nevertheless, began to put some credence in it after I gave him my best explanation of the economics and the ideology currently accepted about this new medium as well as a few ideas of my own born of several years spent in various phases of the business. At his suggestion I've made them into a more coherent whole and present them here to titillate other producers.

Television, like many another technological development with pronounced military possibilities, did not, after Pearl Harbor, progress with any degree of satisfaction to civilian interests. It is too closely allied with radio from the manufacturing standpoint for it to receive attention that might be more properly devoted to the production of war goods. But it has not ceased operations. It is only dormant.

Stations are still broadcasting programs and countless numbers of people are watering at the mouth impatient to get at this new bonanza. I am constantly assailed by people who want to know how to get "on the ground floor". This didn't, and still does not surprise me. But I was, curiously enough, piqued to discover that the businessman making industrial and teaching films was not getting excited about television. I thought *he* should be getting in on the ground floor. And I'll tell you why.

Television's biggest headache is programs. Pretty obvious? Yes, but for reasons that may *not* be so obvious. Even those of us in the business still aren't quite sure what a television program is. We see a little daylight when we consider the sports event or special visual opportunities arising out of newsworthy happenings, within the reach of our facilities. They're a leadpipe cinch compared to the problem of the studio program schedules. The television industry is divided into two camps on the subject of studio programs. On one side you find the exponents of the 18 hour visual schedule, "just like radio", with *some* kind of visual goings-on available anytime within that 18 hour period. On the other side are the devotees of the intermittent visual fare. They project a definite evening schedule, but insist that it is not feasible to offer more than an occasional few hours of programs during the balance of the day.

Both agree that a solution involves among other things an economic factor that cannot be resolved until that time in the future when the number of receivers, transmitters, programs and listeners increases to a point that makes a saner analysis possible.

We are no economic expert so we cannot even hazard a guess about the imminence of that day, but here are a few things we know about because they are day-to-day experiences of any one engaged in television production.

You know, I'm sure, that the number of receivers in operating condition in this eastern program service area is pitifully small. Something like 5,000. And from what I have seen of their owners, I'm convinced that they are the forerunners of the television "hams"—analogous to radio hams. In other words, they are loyal to the stations and program staffs that make it possible for them to show off their receivers to friends. They are not a genuine "lay" audience upon whom we can depend for honest appraisal of programs and presentation methods. Consequently we still are only scratching the surface of public reaction to television. The most nearly typical response comes from the viewer who catches a television program in one of the bars, restaurants or newsreel theatres where such installations have been made.

The point I'm making is this. That the viewer has been conditioned by motion pictures. He is not awed. Invariably his first comment is "looks like the old-time movies." Since he does not own a set whose purchase he must justify to himself and his friends, he reacts normally; and believe me, it's a movie-conditioned reflex.

Now this has economic overtones also. For this reason. Your movie-goer is the potential target for a barrage of salesmanship when television receivers are available, and, although that receiver's cost to him will be in direct proportion to the amount of advertising it funnels into his home, he's not going to be easily placated by entertainment from a *screen* that doesn't measure up to what he's used to in his neighborhood theatre.

Did I say advertising? That's where you come in. Because, in my humble opinion the logical man to tackle the problem of television advertising is the man who has made commercial *screen* presentations of everything from soap, to soup, to lock-nuts. The industrial film producer. To show you why, let's get back to that economic factor again.

This time the television bogie-man takes a different aspect. Preparation time. We all worry about the mounting costs that are incurred with any attempt at a rehearsed program where dramatic



elements, scenery, props and intricate cues for all operating personnel are employed. It's plenty expensive, particularly when it's a "one-shot" affair, on one station, in only one market area. But it's even more discouraging when the best that the producer can summon from all the elements at his disposal frequently is of the quality of a parlor charade.

Here I pause to credit the television pioneers, and those who are still helping to maintain the limited service today, with a great deal of patience, ingenuity and faith. I'm aware of the maddeningly inadequate equipment that must be borne with for the present. I know how much any new medium depends on contiguous technological advances to support and encourage program progress. Naturally, these men are doing the best they can with what they have from an equipment standpoint. It isn't pertinent now to challenge the judgment of these producers in their selection of program fare considering all the exigencies noted in the foregoing. At least their stations are on the air.

These conditions obtain and are not to be bettered until victory. But they do prompt not only a consideration of general policy in the matter of advertising on television but of a specific approach that will lend the greatest impetus to the medium as an art form and as a communications medium.

It isn't possible to wholly anticipate the trend in television commercials. But in my opinion there is no doubt of the reaction to skillfully prepared films analogous to the electrical transcription of present day radio. Nor do I hesitate to take the stump for complete programs prepared on film to be amortized, together with the film e.t.'s by distribution to all available video outlets. Economics again. But of equal importance is the fact that with films the advertiser can start where the viewer is. The viewer

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Management; Unions - - - a Challenge

By BURR MCGREGOR

FOR more than a quarter of a century Motion Picture Management has cried within itself deploring the lack of trained technical employees without setting up a condition within its own organization to correct the evil it cried about.

Within the past several weeks the cry was voiced in the columns of an important Union paper. A laboratory superintendent "in a friendly and constructive spirit" cried his complaint for an improvement of the mental-efficiency of laboratory employees.

Rightly, and unjustly, this cry sounds like one of despair. The cry is right, and possibly the despair warranted because the laboratory is the most vital department of any Motion Picture organization. When the film of a feature production reaches the laboratory processing, ninety percent of the investment expended in the production lies hidden in the undeveloped emulsion of the negative and, according to the technical knowledge of the personnel in whose care the negative is entrusted, will the negative be either poorly or correctly processed.

Unjustly, perhaps the cry is sounded because of an apparent inability to cope with the technical-limitations of the operative personnel under his direction or to surround himself with technicians who could keep pace with the changing discoveries of photographic research.

Another cry is the possibility of the displacement of black-and-white photography after the war; that color photography will be the popular demand to the exclusion of black-and-white and, "where are we going to get the technicians of adequate skill for the proper processing of color?" Sounds like crossing the bridge of despair before arriving at the problem.

Black-and-white photography will not be displaced. It will always be in demand as a commercial and entertainment and scientific medium for illustration and technical and uncolorful subjects.

There is no question but what color photography will increase in popularity and demand. The same urging will incite deeper research and new methods of processing as colorful subjects demand illustration to point up their attractiveness, both commercial, scientific, and theatrical.

Scientific research will improve the quality of both black-and-white and color photography through the rigid demands that will be imposed upon both processes. Chemical research will improve texture, speed of emulsions, latitude of exposure, simplification of processing for economy, which in turn will demand of operating technicians a greater exaction of technical-operative skill to

bring forth a better image with a deeper range of detail.

The laboratory technician, if he would keep pace with the swift movement of progress, will keep himself mentally equipped to grasp understandingly, the physical properties of new discoveries in his practice of photographic science.

Photography IS a science, and as a science will increase in the range of its application. The science of modern photography has already reached such magnitude that its vastness of technical expression, in its entirety, is beyond the apprehension of any one human mind. It will ever become necessary for the photographic technician to become "single minded," to specialize in that particular phase and department best fitted to his aptitude, where the theory of his technical skill can be developed by practical application for the protection of the product entrusted to him.

Management of the Motion Picture Industry has struggled bravely to keep in step with the scientific application of photography as related to its necessity, as each new discovery has demanded recognition. Photography is the basic foundation of the Industry and a relentless competitive rivalry has compelled the expenditure of vast sums of its working capital to perfect the quality of its product.

The effect of this expenditure has resulted in a variable but steady progress, due mainly to individual research instead of a supervised or established effort, except where such improvement has evolved out of the research departments of the manufactures. Such discoveries of improvement have been awarded proper and profitable recognition, which in turn has spurred the activities of scientists to deeper research, adding refinements to improvements that have been passed on to the benefit of the Industry and, a score of able technicians.

A pessimistic cry of self pity and one that is so often repeated: "The Management of the Motion Picture Industry . . . seldom pays attention or worries about the quality of personnel in whose care the delicate film, carrying its expensive images, is entrusted to for processing," is wide open for discussion.

An impartial observer will discover the fact that Management of the Industry has invested huge sums to promote a progressive laboratory quality of product. One need only to witness the improvement of laboratory installations and the engineering methods of operation in the modern laboratory as compared with the processing methods of only a few years back, no more than a decade, to be made aware of the lavishness of expenditure demanded in order to keep abreast, or at least in

pace, with progress and competitive demands.

It is, however, a regrettable fact that Management, except in a few instances, has not inquired specifically into the technical quality of knowledge and skill of individuals assigned to important positions and entrusted with the operation of costly and improved installations.

This apparent lack of interest is mostly on the surface and is not entirely the fault of Management. Responsibility for the technical fitness, coupled with the practical experience, that would enable operative technicians to be effective units, rests equally with the Unions representing the technician as well as with Management.

Without the close coordination of a balanced understanding between the Unions and Management, the technician becomes a lost unit in the dark recesses of the laboratory, almost forgotten. If the technician's performance has been consistently good in productive quality, his effort has been taken more or less for granted.

The individual usually follows his daily routine with self-interest and self-satisfaction in uncomplaining regularity, unless irritated by his superior in position with an outburst of temperament in an effort to cover his own confusion, and by so doing, throwing out of balance the smooth routine of his organization, when a little studied understanding of the technician's problem would raise a plodding morale. Such an individual has usually been confined to one spot of performance so long that he works automatically and, when a change of routine, or personnel, does take place his automatic movements are thrown out of balance and accompanied by waste and friction until a new groove can be fitted back for a new automatic operation.

And so the laboratory executive loads himself with worry, and justly so, for he can only be as good as the men under his direction, and their faith in him. His management can be no better than the technical knowledge of the technicians of his department and their ability to; "Deliver."

The Producer (Management), is interested only in the quality of his product as it appears upon the screen. Personalities, except where they are of value to his product are of secondary interest. His main worry is to keep his production with a limited schedule of time and a budget of expense. Seldom, unless he becomes excited by the discovery of unexceptional effect or method of economic procedure, does he inquire after a technician whose effort has attracted his attention.

Exceptional recognition attracted to the individual technician can only come through the result of a special quality his effort has contributed to the finished product; The speed with which he has been able to deliver to his part of the job to the next man in line; the initiative that has prompted him to

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A Training Film That Trains

Reviewed By **BRUCE A. FINDLAY**

HEAD SUPERVISOR, AUDIO-VISUAL EDUCATION SECTION, LOS ANGELES CITY SCHOOLS

FOR some time educators have been demanding the production of motion pictures that do more than talk—pictures that actually teach. A teaching picture demands “participation” on the part of the observer; an illustrated lecture is not the best type of teaching, for it is not what the screen does so much as what the observer does that constitutes the ideal lesson.

Recently we had the privilege of screening a commercial training film that includes all of these teaching techniques. “Replacing Oil Cooler Tubes” is the title of this 800 foot, black and white, direct 16mm. sound motion picture. It was inexpensively produced by the AiResearch Manufacturing Company of Los Angeles. Credit goes to their own photographic department, with the technicalities capably handled by Edward Pyle. Telefilm, Inc., of Hollywood is responsible for the 16mm. sound recording, the narration being done by Don MacNamara. The opening and the ending titles were cleverly associated with the subject matter (oil cooler radiators) of the film, by use of the honeycomb design of the face of an oil cooler, as a low-key background for the title letters.

This unusual job-instruction motion picture shows clearly and in complete detail, how to make repairs on the oil coolers made by AiResearch for use on the modern airplane. The film has three basic sequences, the first of which shows the correct step-by-step procedure of doing the job. Interest is sustained by frequent changes of camera position, intelligent cutting in of close-ups and extreme close-ups. A trainee sees how the job should be done, probably more clearly than if he were looking over the shoulder of the demonstrator.

Each tool used is shown in full screen close-up and is clearly described immediately prior to its use. The general photographic treatment is particularly effective in the high-lighting of the subject which causes it to stand out from a dark background thereby attracting attention.

The second sequence is a “review” of five of the most important steps in the job procedure. The narrator says, “Now, let’s review the five most important steps,” as a brief and legible title (white letters on a black background) lists the five review points. Each point is cleverly

“wiped down” on the title, as the narrator reads the descriptive line. Following this title, the first review step is clearly illustrated by brief scenes. Over the first of these is a super-imposed title, describing the step which fades in across the bottom of the frame. The narrator reads this title line as it fades in, and continues his story after the title fades out. The other four review steps are similarly presented. This simple review technique, with the narration emphasized visually by the super-imposed titles, is an excellent treatment.

One of the most important ingredients in a master teaching lesson is review. Speed is one of the great pitfalls into which producers of training films readily fall. Because the subject matter can be reeled off is not evidence that the observer can reel it in. Review well balanced and intelligently handled is a factor too often overlooked. Mr. Pyle has treated his review in a way deserving of real credit.

The third, or “participation,” sequence of this film is well handled also. To insure observer participation, the narrator says, “Now, let’s see if we have learned how to replace oil cooler tubes.” Then, the screen goes completely dark, except for the numeral “1” which appears in the lower left corner of the frame as the narrator asks, “What was the first important step?” The narrator remains silent for about five seconds to allow the observer time to realize he has been asked a question. In practice, this technique makes him think about the facts presented in the film. After this pause on the screen, the narrator says, “That’s right!” and reads the title line describing the first point as the title letter “wipe” across the bottom of the still dark frame. After the narrator reads the title fades out as the scene continues. This same treatment follows for each of the other four important steps. We found ourselves trying to remember the points as the narrator asked the questions.

When sound teaching techniques are incorporated in the film itself, the observer is guaranteed a good lesson. When the instructor is inexperienced in teaching, he may or may not present the subject in a manner to bring about maximum learning.

use his technical skill to meet an emergency; his alertness that has detected mistakes before they could happen.

It is a glowing fact that few laboratory technicians have attained a deeper knowledge of the science of photography than the requirements necessary for the operation of their specialized, stationary assignments. Many Laboratory technicians have had to perform their assignments according to routine rule and printed instruction without knowing WHY their operation is effective. Mainly, their efforts, and the methods they follow, are successful because they are the result of experience gained through a long course of trial and error, a sort of “feeling the way” procedure, instead of the dictation of an analytical reasoning-mind of technical skill and knowledge attained through and academic education of scientific research and aptitude for analysis.

Why IS such a condition? For a decade the Management, and the Unions, have wasted time, effort, money, and energy, vigorously fighting each other until the cost of their bickerings in money alone represents a staggering sum which, had it been expended on research and technical instruction for the benefit of both Management and Unions, would have advanced the industry and the individual and all concerned far beyond the present standard of economy and quality of product.

No other manufacturing business has been conducted with such indifferent regard for the technical knowledge of its personnel. There is an exception however. The Color Laboratories, where technical skill of processing is absolutely essential.

It is amazing, that in spite of all the blind experimenting that has been carried on in black-and-white photography; searching through formulated theories, that a fairly consistent quality of good photography has been produced, but—at the expense of enormous waste of material, time, and money.

The condition that compels costly and wasteful experimentation is not a single fault. It is not only the struggling fault of the unenlightened individual technician, but of the Management from whence issues the weekly pay check and, the Union that carries the technician’s membership.

And, there is the other well known evil. The evil of personal favoritism. The forcing of an unqualified individual into technical employment through a political status and other abused influences; always at the expense of economic-quality product. This practice has been one of the greatest evils of employment in the Motion Picture Industry.

It is the responsibility of Management and the Unions together to educate a

(Continued on Page 128)

The Road To

ACADEMY AWARDS

For outstanding

PHOTOGRAPHIC ACHIEVEMENTS

Is solidly Paved

with

EASTMAN

NEGATIVES—

J. E. BRULATOUR, Inc.
Distributors

Aces of the Camera

(Continued from Page 116)

For the premier of this picture, anticipating "Fantasia" by some fifteen years, Karl had sections of the orchestra all over the theatre, from the regular orchestra pit to the gallery.

Every picture he made was a masterpiece of camera work, and it was evident that the man knew what he was doing. His first triumphs had quite obviously not been the result of coincidental good fortune. Every new release reestablished him as a master, and Hollywood decided it needed him. Paramount offered him what was probably the most flattering offer ever made to any cameraman: a five year contract, starting at one thousand dollars a week, with a raise of two hundred and fifty dollars a week every year, without options. It represented a lot of money, and it represented recognition. It was a tribute to the contribution he had made to the art and drama of the cinema.

The contract was signed, but it never went into effect. Somehow, when Karl and his wife started thinking about their projected trip to Hollywood, with the dislocation and reorientation of their lives that it would entail, they wondered why they had agreed to it in the first place. It certainly offered a lot more money than Karl could earn in Germany, but there were other things to be considered. They knew no one in Hollywood, and they would have to leave all their friends, their flat in Berlin and their farm in the country. They felt supremely happy and they had all they needed or wanted. The Berlin they knew was untouched by the political intrigues that devastated that city in later years, and was for them, rather, the home of the writers and painters and scientists whom they numbered among their friends.

So Karl went back to see Paramount's European representative, a Mr. Rachman. It turned out that that gentleman was an understanding man. When he learned the reasons Karl had for changing his mind he tore up the contract.

He was eventually brought to Hollywood in 1930 by Technicolor, who needed his services in an advisory capacity on a technicolor matter. Karl was in London at the time, a director of, and representing a Movie-Colour Ltd., a company that had the 35 mm. rights to the Keller-Dorian color process the 16mm. rights of which belonged to Eastman and was marketed under the name of Kodacolor. The idea that Dr. Kalmus had, when in London he persuaded Karl to come to Hollywood, was that he could in some way combine the three-color process and the advantages possessed by the Keller-Dorian method to that with which Technicolor was already engaged. But things didn't work out that way, and Karl's contract was sold to Universal.

Technicolor wasn't the only company having a little trouble in those days. Universal had their troubles too, and though they were of a different nature the headaches were just as bad. They were making "All Quiet on the Western Front." In fact they had made all but the finish, and were scheduled to open the following week at a much advertised and highly publicised premier.

Time was short, but still they couldn't agree on an appropriate ending. Somehow, the effect they wanted to achieve eluded them. Lewis Milestone, who was directing, became frantic and was heard to remark that if he only had that chap Freund here, Freund could give them a finish.

Milestone was delighted when he learned that Karl was not in Europe as he had supposed, but right in Hollywood. He sent for him immediately. It was a Sunday, and the picture was due to open later that same week. Something had to be done, and quickly. Karl didn't disappoint. He came up with the idea of the butterfly that the young soldier tried, on that quiet Spring day on the Western Front, to catch, that resulted in his death from a sniper's bullet. Simple, dramatic and symbolic, with the Freundian touch. It was the perfect ending for an outstanding picture. Universal bought Karl's contract and made him cameraman and director.

When the Universal contract expired after a matter of four or five years, he went over to M.G.M. where he has been ever since. His first assignment at that studio was in directional capacity on Peter Lore's (?) first American picture. A horror story, it was a little out of place and incongruous on a lot whose stock-in-trade was productions tailored to fit glamorous leading ladies.

Then came "Good Earth." After that Karl decided it was much better to be a cameraman on a big budget picture than a director on a quickie.

The thing that has marked the career of this man who has been making motion pictures since 1906—who dabbled in sound pictures as early as 1908, who has enjoyed a high degree of success and recognition in every field of endeavor—has been his constant fight for recognition for the cameraman. Not so much on the credit titles as in the studio. As far as the credit title is concerned, he doesn't think anyone un-connected with the industry is particularly impressed one way or another with any of the names appearing in the credits. To support his contention he points to the question asked on a popular radio quiz-show during the height of "Mrs. Miniver's" successful run. The otherwise well-informed contestant did not know who directed that Academy Award winning picture. And with several similar instances to round out his theory he concludes that the great public is equally unaware of both cameraman and director.

His fight is to have the cameraman recognized as an artist who brings an important contribution to the production. He contends that a cameraman contrib-

utes as much as a director does to a picture, and that he should have the same opportunity to prepare himself for his job of shooting the picture as the director does for directing it. He believes that a cameraman who has had a chance to familiarize himself with the script, who has been consulted with regard to the sets against which the action is to be shot can turn in a smoother piece of work, more quickly and more intelligently done, that will result in a better picture.

The director lives for months with the story he is going to make into a film. He knows every situation, every mood. It has become a part of him. He has studied the characters and selected his cast. In all probability he has fought and argued with people to get what he wants. When he finally starts to put the story on film he has all the particulars in his mind.

The cameraman, on the other hand, might get 24 hours notice before being assigned to the story. He frequently has to do this all important work without the benefit of any prior knowledge of the script. He arrives to find the sets all built and ready, and has to use them whether he likes them or not.

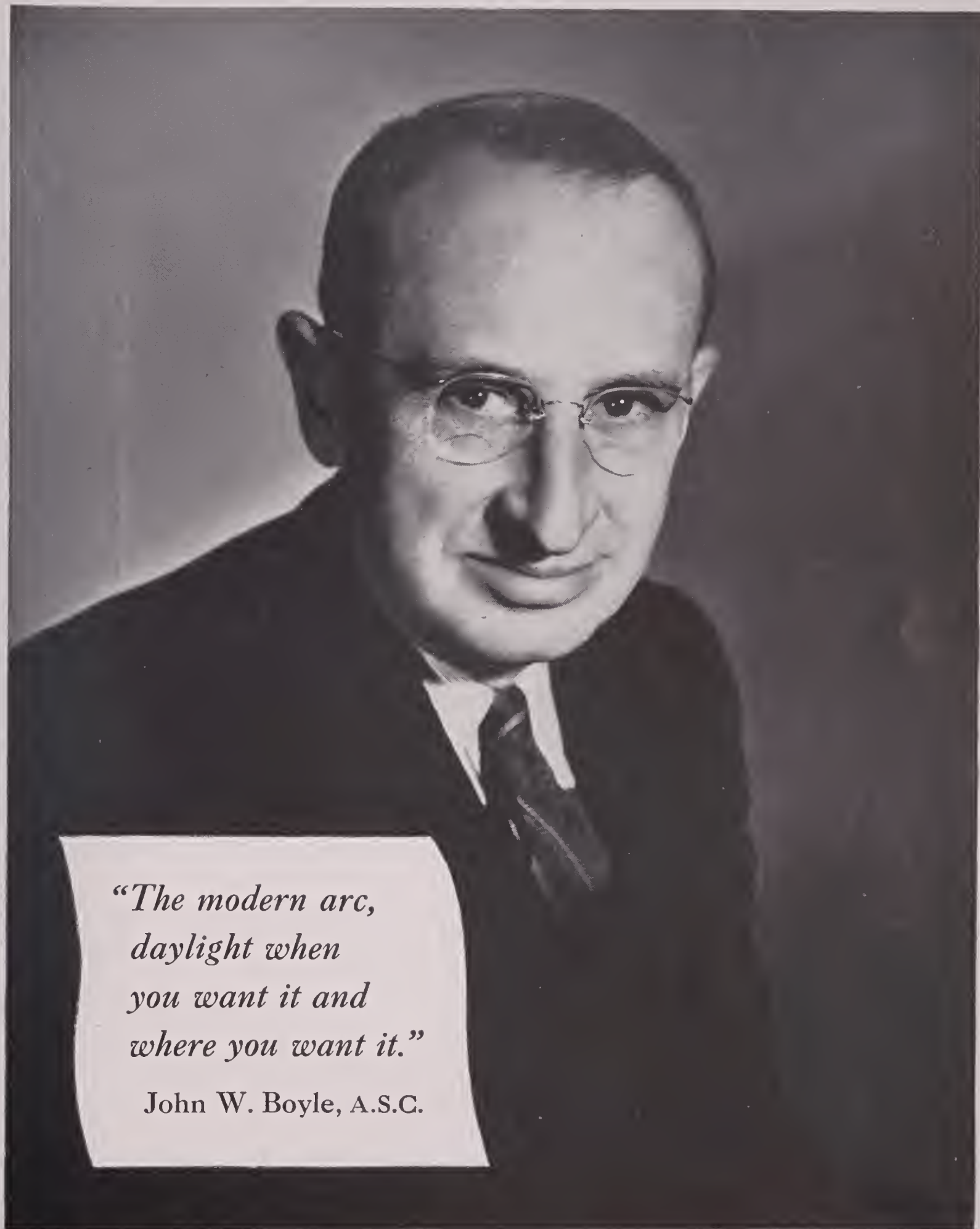
Furthermore, the cameraman has to make, overnight, a psychological change. He may have just finished shooting an entirely different picture; making the transition perhaps from a light musical to a low-key melodrama. He may have been working with a director who wanted his scenes made in an entirely different manner from that demanded by the director on the new picture. He is faced with the necessity of adjusting himself to a new star and an entirely different set of personalities. Under any circumstances, it is too short a period in which to make the adjustments necessary to get the most out of a story.

Some cameramen seem to find it expedient to determine who the strong character is on the picture. Is it the star, the director, or the producer who will dominate the production. Having made up their minds they will then direct their efforts to win the support of that person. Karl doesn't do that. He took his cue from Irving Thalberg, who told him, "Karl, please yourself." So he does, and pleases everybody.

New Slides from S.V.E.

A SET of thirty-five 2"x2" Kodachrome slides from the collection of Charles Perry Weimer's "The Cavalcade of South America" has been added to the library of the Society for Visual Education, Inc., 100 East Ohio Street, Chicago 11, Illinois.

Mr. Weimer made a 100,000 mile, eighteen month photographic survey of the continent of South America. Slides representative of Brazil, Chile, Venezuela, Colombia, Ecuador, Argentina and Peru are included in the set.



*"The modern arc,
daylight when
you want it and
where you want it."*

John W. Boyle, A.S.C.

BUY UNITED STATES WAR BONDS

NATIONAL CARBON COMPANY, INC.

Unit of Union Carbide and Carbon Corporation

CARBON PRODUCTS DIVISION, Cleveland 1, Ohio



New York, Pittsburgh, Chicago, San Francisco

Camera Planes Win Wars

(Continued from Page 115)

Speedily developed and printed after return to headquarters, the photographs are subjected to the critical study of highly trained personnel. Read with the aid of powerful magnifying glasses, such photographs furnish clues to every sort of enemy activity. A good man can look at a photo of an enemy air field and tell you the type of planes on the ground; he can estimate the output of a factory from certain details in a photograph; or he can spot flak batteries despite the cleverest camouflage. Recent experiments have developed a color film with which pictures may be taken and developed speedily under almost any conditions, revealing enemy secrets which only color film can produce.

The War Department reveals that cameras shoot through special glass windows set flush with the fuselage and located at angles which depend on the cameras used. On some F-5's, tow cameras take overlapping pictures, shooting straightdown from a single window. But the most common camera set-up is the trimetrogon method. This consists of three cameras which shoot three different surface views. One of parallel with the ground, flanked by two others whose optical axis are depressed 30 degrees below the horizontal. Result is a series of photographs which take in a path from horizon to horizon over any territory the F-5 flies.

For most aerial mapping, three basic types of cameras are used. In the trimetrogon method K-17's are usual. This camera can be equipped for focal lengths of six, twelve or twenty-four inches, and uses a between-the-lenses shutter of the compur type. K-22 cameras may also be used with a focal length of twenty-four inches and forty inches with a curtain type shutter.

For reconnaissance work the longer focal lengths are preferable, since longer lenses are telescopic, show more detail, less area. For charting and mapping, where less detail is required, shorter lenses, which have greater coverage, are used.

With the invasion of the European continent imminent, the Lightning F-5 daily is playing an increasingly important role in the war effort. Members of the Focus Cats are the pathfinders, the invasion-chartiers, and the map-makers of the Allied High Command. Recently they were asked on one assignment to photograph 200 enemy air bases in Europe and, flying F-5's they brought back pictures of 167 bases in six days.

Flying high-level, they race across the continent on their hazardous missions and the unarmed Lightnings carry them through flak and the fire of enemy pursuit planes and bring them home with the goods.

Here is a view of the new Lightning F-5 camera ship escorted by a P-38.



Don't Forget Television

(Continued from Page 120)

has accepted screen entertainment—he has accepted screen advertising. Although he has not heretofore accepted screen advertising along with his entertainment feature at the same showing, he is conditioned to advertising in his home entertainment via radio. The adjustment will not be a difficult one provided the entertainment is at least of the caliber of the average good evening radio show. Currently, the average studio television entertainment falls well below standard for either radio or motion pictures.

I am even more apprehensive about the programs to be aired when television service is increased. Whether the viewer will have an 18 hour television day, or only intermittent visual, he's going to be subject to a pretty meagerly contrived entertainment schedule.

Whatever the final mixture, and it will be just that, there is a way to defray part of the cost of programming for television through the sale of air time to advertisers who furnish their own "tele-transcribed" programs or announcements made on the film. For, a better show can be devised, more and better talent can be employed, and a more lavish mounting is possible if the delineation of the sponsor's product or idea can be extended, through film, to all the market areas which surround the television transmitters of the nation. Transmitters are as yet unlinked by any network arrangements. This is right up the industrial film producer's alley.

I cannot promise that he is automatically going to fall heir to this particular undertaking. But when consideration is made of sources for personnel, ideas and equipment to handle jobs of this nature, the industrial film producer cannot be overlooked. Nor is it to be merely a transplanted function. You will have to learn to do some things in a new way.

You will also have to learn to do some routine jobs in a better way. Television standards are going to be pretty exacting. You can anticipate, after the war better definition, larger screens, color, really high fidelity sound, and more efficient film scanners. You may also anticipate being required to furnish quality prints—written, directed, lighted, photographed, cut and printed in a manner more compatible with television requirements. They will probably be shorter, subtler in treatment, lighted rather more flatly than is common in studios today, employ more mobile camera work and finally, enjoy more laboratory attention to secure prints that satisfy the requirements of electronic transmission. What else is in store for the film producer in television is anybody's guess, but at least he has the equipment, the technical skills, the adaptability and the experience. Plus these he knows how to use screen salesmanship, and he has millions of friends who will be glad to see him again in this new medium—glad to welcome him to their homes and to admit a guest too,—the manufacturer of that soap, or soup, or those lock-nuts.

Photo Industry Plans for Surplus Equipment Disposal

IN a move calculated to insure orderly postwar disposal of government-owned photographic equipment, a "committee on government surplus war equipment" has been established to represent photographic manufacturers and dealers in negotiations with government agencies handling disposal problems.

This committee, functioning as a unit of the Photographic Manufacturers and Distributors Association, will also represent the National Photographic Dealers Association, The National Association of Visual Education Dealers, and will work in cooperation with other interested groups. The new committee is headed by J. Harold Booth, Vice President of Bell & Howell Company.

"PROFESSIONAL JUNIOR"* TRIPOD

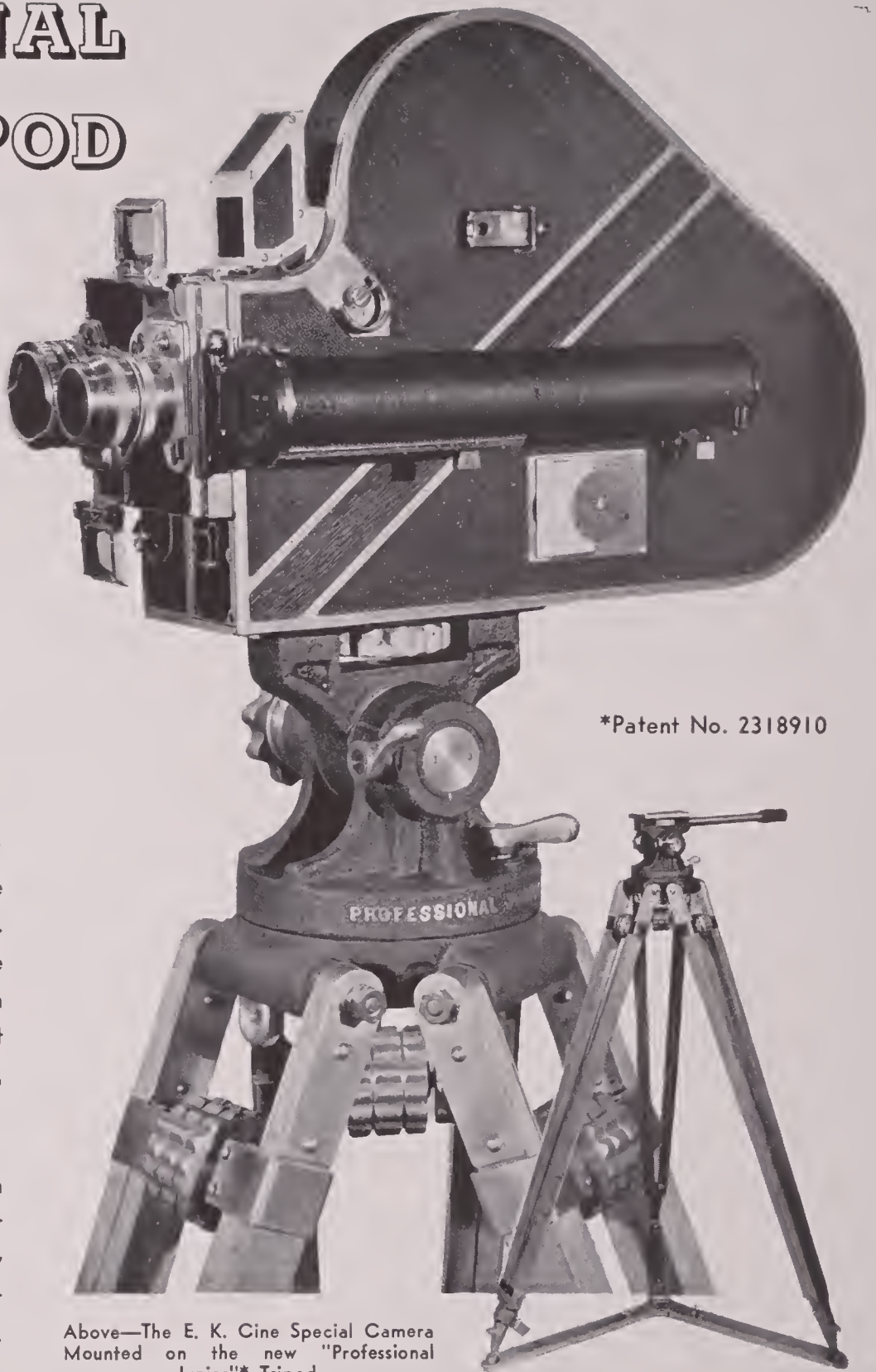
WITH REMOVABLE HEAD

The friction type head gives super-smooth 360° pan and 80° tilt action. It is removable, can be easily mounted on our "Hi-Hat" low-base adaptor. The large pin and trunnion assures long, dependable service. A "T" level is attached. The top-plate can be set for 16mm. E. K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

The tripod base is sturdy. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. Complete tripod weighs 14 lbs. Low height, at normal leg spread, 42". Extended height 72". All workmanship and materials are the finest. Also available are heavy fibre carrying cases.

***Tripod Head Unconditionally Guaranteed
5 Years. Write for Descriptive Literature!***

"Professional Junior"* Tripods, Developing Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and Other Government Agencies—also by many leading newsreel companies and 16mm and 35mm motion picture producers.



*Patent No. 2318910

Above—The E. K. Cine Special Camera Mounted on the new "Professional Junior"* Tripod.



Above—Collapsible and adjustable telescoping metal triangle. Extends from 16½" to 26½". Has wing locking nuts for adjusting leg spread and stud holes for inserting points of tripod feet. Triangles prevent damage, insure cameramen that their equipment remains in correct position and will not slip on or mar any type of surface.

Left—35mm Eyemo with motor and 400 ft. magazines mounted on "Professional Jr."

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY



Management: Unions

(Continued from Page 122)

desired individual into technical fitness that will make him an asset to the employing company by placing at his option an academic course through which he can attain the required standard of technical knowledge before he is entrusted with an important assignment.

Such a course of technical training should be conducted within the confines of the employing company where every practical setup is maintained with which to demonstrate the theory of its procedure. The training should be supervised by competent technicians qualified to demonstrate, and impart an adequate knowledge of operative theory as related to practical operation.

If Management, and the Unions, would cease their combative struggles and get down to a constructive basis together of sharing in the training of personnel, a higher standard of quality-product would be the result.

No man can improve his earning capacity, or his worth to Management and Union affiliation, until he can improve himself and his constructive effort, and no man can improve himself or his effort if he is hedged about by restraint and worries caused by Union and Management bickerings related to the welfare of all concerned. There is a right and a wrong way for such matters to be adjusted. The right way is the only economic way in the end and eventually asserts itself.

It is the duty of each producing studio of major standing throughout the industry to maintain a well setup research laboratory, or department, ably supervised and ready to answer inquiry at all times. Funds for the maintenance of such a department could be supplied by Management in conjunction with the Unions, equally—in cooperation.

"Think it over."

Camera of Tomorrow

(Continued from Page 118)

It is often a problem in most present projectors to remove the screw base when the lamp explodes. Have also a rheostat for the control of the brilliance.

3—Constant speed.

Constant motor speed is an absolute necessity for sound. Have it correct at all times for set speeds 16-24-32.

4—Sound.

Have all sprockets for sound films, and have an easily added sound head and mechanisk, sound control, etc. Have a point for easily coupling with a turn table, and flexible shaft coupling for 33, 1/3 and 75 rpm. speeds. Possibility of hooking the home radio and extra loud speakers, micro, etc., if desired.

5—Film gate, threading, etc.

To have a good gate arrangement permitting the flawless projection of buckled films (particularly 8mm.), non-tearing teeth, no scratch pressure gate, ease of threading, accessibility for cleaning of the window, and a frame centering.

6—Lubrication.

Lubrication is often a problem. Some points are hidden with pleasure it seems. The future projector should be able to dispense with oil, using special self-lubricating gears and axes, perhaps graphite. When used up, the bearing (self lubricating), should be easily changed without the necessity of turning the projector to the manufacturer.

7—Rewind and extension arms.

A high speed rewind, without belts or with enclosed ones for the first arm (400' in 16), with possible extensions up to 800 for 8 and 1600 for 16.

8—Hook up with house circuit, pilot light.

An easy and simple way to plug with the room circuit and a double-way switch, to switch on and off. The pilot light also should be easily controlled manually and possibly with a semi-auto-

matic coupling, to turn on the light when the film or a splice breaks, or loss of loop, if ever.

9—Various.

Let us add a sort of automatic feed or something to help the threading, with no possible loss of loop. Real cooling fan. Effective smooth permanent titling of the projector up to 60 degrees if necessary (with automobile head lamps the angle of throw would not matter), and why not up to 90 degrees for projection on the ceiling for our boys in hospitals? Stop to single frame and effective protection of the film for any length of time. Perhaps an arrangement to stop the film at titles, as in the Pathé, reducing considerably the length of non-animated titles, this for silent films. This arrangement to be automatic or semi-automatic, i.e. which could be dispensed with (locked) when using sound films. AC-DC motor for 110/220 volts. Strong simple convertor for use of sound equipment with DC current. And with the projector also, standard items at least for the lamp bases. Finally perhaps a projector which could pass, with a simple alteration, 8 or 16mm. film with no loss of brilliance.

More About Reflectors

(Continued from Page 117)

I had observed that the girl had rather large eyes, and in that sun light the pupils had been reduced to mere pin points. This would spoil any picture, for it is the eyes that we photograph. They tell what a person is thinking of, whether it be love, happiness, hate or fear. One of the secrets of great photography is properly photographing the eyes. Regardless of what lighting effect a cameraman may be trying for, he should study his subject and so light it that the eyes will be normal at all times, and able to move dramatically and unhampered.

Now that the problem of direct sunlight has been taken care of, there may be something else which throws a glare into her eyes. Perhaps a roof top, a white umbrella or even sky glare sufficient to reduce the pupils. This can be prevented by standing something dark directly in front of her and in the line of her vision (D). When this is done it is surprising how large and soft the eyes become, and all the little squint lines disappear.

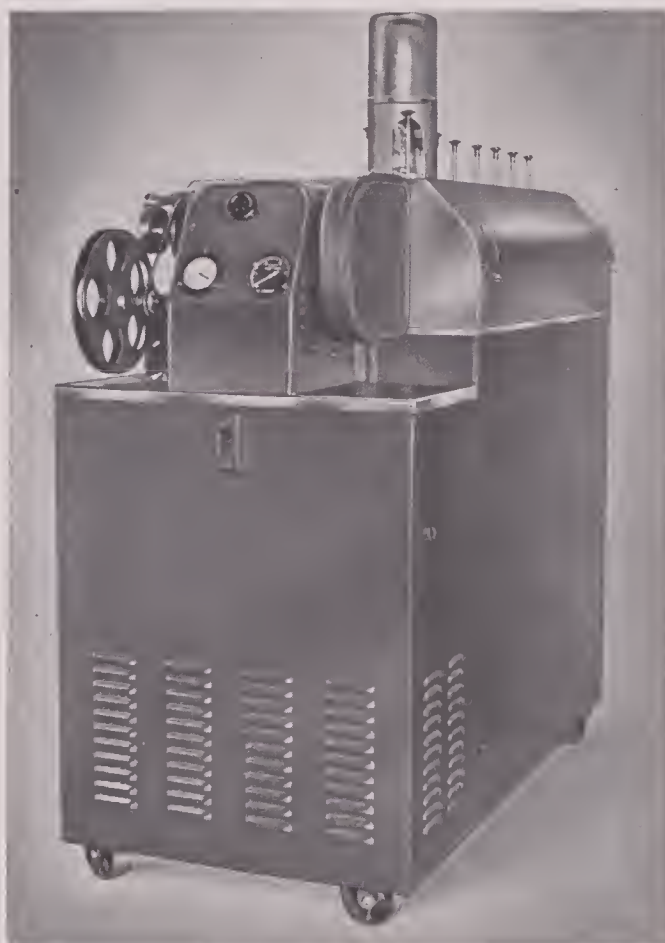
Good pictures are not hard to make, but they take a little time and study. It is better to make one good picture than a lot of poor ones.

In the March issue we talked of a three-quarter light where the sun is behind the camera. This article deals with the source of light coming from the side of the camera. Next month we will discuss the problem of the sun behind the subject and shining toward the camera.

The Houston Corporation

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Los Angeles, 25, California



The Houston 16mm. Developer

Description: Designed for daylight operation. This unit has a capacity of 10 feet per minute. A completely automatic processor with variable speed control, automatic temperature control, developer turbulation, infra-red drying, and siphon type solution replenisher. Top frictional drive with floating bottom elevators maintain uniform tension throughout machine with minimum danger of breakage to film. Power supply 110-volts A.C. 50-60 cycle.



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Agricultural Motion Pictures And The War

By CHESTER A. LINDSTROM

ASSOCIATE CHIEF, MOTION PICTURE SERVICE
U. S. DEPARTMENT OF AGRICULTURE

FOR the second time since the birth of the motion picture industry, the screen has been called upon to fight side by side with other weapons in defense of our sacred liberties. And what a powerful weapon it is! It has been said that the pen is mightier than the sword. This new weapon is mightier than either. In the hands of a treacherous and unscrupulous enemy motion pictures spread fear and terror among the peoples of weak and defenseless countries, and made easier the conquests that followed. In our hands they are doing valiant service in ferreting out the activities and camouflage of our enemies, training our young army in the arts of war, cementing friendly relations with our neighbors and allies, guiding our war production effort, and maintaining morale on both the home and fighting fronts.

At no time have motion pictures been put to such varied uses as they are at present. Perhaps I may be excused for platitudinizing when I say that "motion pictures have just come into their own." We, who have been connected with their production and use for the past twenty-five years or more, have heard that statement made at probably every meeting where motion pictures have been a subject of discussion. Yet that "coming into their own" has always seemed to remain "just around the corner." By numerous studies and tests their value in education, instruction, and training was proved, yet a comparatively small portion of the school budgets went into motion pictures. It was left to industry to show by action instead of words that motion pictures had really been "recognized" as an educational and training medium. Before the war thousands of films were made by industry for sales promotion, public relations, and training purposes, and it is no credit to big-wig guardians of school budgets that for years these were practically the only motion pictures available to that earnest group of visually minded educators who saw in this medium the opening of a new field of unlimited possibilities in education and training.

It took a world upheaval to force acceptance of the proved facts that where appropriate motion pictures were used in teaching, lessons were learned faster, retained longer and were more thoroughly assimilated than by any other

known method. Here we were, an unprepared nation faced with a fight for life, untrained, except for the small body of professional soldiers, in the skills by which wars are won. Ten million men unfamiliar with even the simplest implements of war, to be trained in the operation of rifles, machine guns, cannon, tanks; in communication, transportation and logistics, and in the thousands of other skills by which modern warfare is conducted. Additional millions had to be trained in the skills required for producing the complicated weapons of modern warfare. There was no time for the slow procedure of old-fashioned training methods. Time was on the side of the enemy. Each day saved meant the saving of perhaps thousands of lives, yet inadequate preparation might mean the loss of the war.

Necessity, therefore, forced the adoption of a medium which would train quickly and thoroughly not only a few, but thousands. This is where the motion picture "came into its own." Like an all-seeing eye it delved into the deepest mysteries of the interior workings of engines and guns and tanks, and brought forth, by animation and stop motion, the secrets of construction and operation which had to be learned to operate them efficiently. Films were made to serve in every possible field of training. Instead of demonstrations that could be seen inadequately by just a few, training pictures were shown repeatedly to hundreds at a time, and training progressed more rapidly than even the most sanguine had hoped would be possible.

In the agricultural field, the problem was that of converting our peacetime production to the production of the foods, fibers, and oils needed for total war, guiding the food habits of a whole to utilize available nutritive foods, and making an admittedly wasteful public conservation conscious. This, too, was a training job. Thirty-five million farm people can not be made to produce so many bushels of corn, peanuts, or soybeans by proclamation or regulation. They have to be shown the way and wherefore of conversion from crops that have proved profitable to some with which, possibly, they are unfamiliar, and they have to be shown how to grow the new crops. They want and need all the information they can get on the problems involved, in order to determine intelligently how to get

the most of needed crops from their land with available machinery and man-hours. At no time has efficiency in farming been more necessary than at present. Many farmers, like the rest of us during years of peace have slipped into ways of doing things that are not always the most efficient. They could get by with it then, but now the situation is different. There is less labor, less machinery, less fertilizer, less of everything. Efficient use of time means increased manpower; efficient methods of cultivating, fertilizing, feeding, harvesting, care and use of equipment meant not only the ability to increase production with less labor at a time when the latter is not readily obtainable, but to have all-important manpower while doing so.

The motion picture program of the Department of Agriculture, since the start of the war, has been geared largely to assist the farmer in solving such problems, and to give him information and guidance in converting and increasing his production to the needs of total war. Certain movies have been designed to build and maintain morale among the hard-pressed farm people, and, in the interest of harmony and cooperation, to give others an appreciation of what the farmers are doing to help win the war. Certain films have been of the how-to-do-it type; others have presented problems for consideration. The Department's war pictures for farmers may be classified into 3 main types:

(1) Guidance and incentive pictures, designed to encourage the production of adequate supplies of food, fiber, and oils to meet our war demands, and to stress the need for conservation of our resources.

(2) How-to-do-it pictures, designed to explain certain steps, processes or methods in agriculture, home economics, and forestry.

(3) Morale-building films.

The following are fair illustrations of the first or guidance and incentive type:

Wartime Farming in the Cornbelt, released in 1942, shows the steps taken to reclaim the soils depleted during and following World War I, and how in consequence the Cornbelt is now able to provide enormous quantities of food and fiber through the use of good soil conservation practices without unnecessary exploitation of the land. The conclusion plainly to be drawn is that good soil conservation practices increased yields, and that no sensible farmer would follow practices which deplete the soil and lead to ruin.

Democracy in Action, released shortly after Pearl Harbor, was rushed to completion before the spring planting season in order to impress farmers with the need for increasing production. It outlined the crop production goals to be reached during that first year.

(Continued on Page 134)

This article reprinted from the S.M.P.E. Journal.

STEADILY IMPROVED

THE PREFERENCE of cameramen and directors of photography for Eastman Films has a sound basis. In the face of wartime pressures, the exceptional quality of these films has been not merely maintained but steadily improved. Eastman Kodak Company, Rochester, N. Y.

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EASTMAN FILMS

AMONG THE MOVIE CLUBS

Utah Cine Arts Club

Greater part of the March 15th meeting of the Utah Cine Arts Club was taken up by the Film Clinic. Members of the club are proud of their clinic, for they say, "It is a clinic, and not a post-mortem examination. In a good clinic the patient is not ridiculed because he has Bright's Disease. He is not criticized for an enlarged heart. Likewise in our film clinic we hope to take an ailing reel of film, give it a transfusion of titles if need be. We may want to remove the entire section. The sole purpose is to make a better and happier picture."

La Casa Movie Club

Nine films were on the program at the March meeting of the La Casa Movie Club of Alhambra, California. Four were 8mm., two were 16mm. and three were 35mm. They included "Yellowstone National Park," "Mt. Ranier," "Ice Follies and a Few Missions," "Sunny Kansas," "Life in the Ozarks," "Rare Birds We Seldom See," "High Sierras," "Death Valley" and "The Desert."

Washington S.A.C.

Harvey Rockwell, former engineer with the Weston Electrical Instrument Company, gave a practical demonstration of how to use exposure meters at the March meeting of the Washington Society of Amateur Cinematographers. Members brought their cameras and light meters and learned a lot about how to use them.

Southern Cinema Club

Southern Cinema Club is conducting a contest for the women members. Prizes are for best one-reel black-and-white films photographed by the women who enter them. Judges will be male members of the club. Closing date is April 25th.

The Southern Cinema Club has also stirred up keen competition by announcing the awarding of a traveling "Oscar." This will go to the member showing the best film each month. It is not retained permanently, but is passed on each month.

M.M.P.C.

Four films featured the program at the March meeting of the Metropolitan Motion Picture Club at the Hotel Victoria, New York City. Films shown were "The Last Review" by George A. Ward; "Little Sherlock" by Charles J. Carbonaro; "Royal Visit" by T. J. Courtney; and "Flowers of the Southland" by George Mesaros, famed for his garden photography.

Vallejo Club Sells Bonds

Hats are off in Vallejo, California, to the members of the Vallejo Movie Club. The club staged an amateur and professional movie show in the interest of the 4th War Loan Drive, and sold \$1352.80 worth of bonds and stamps. That's turning a hobby into something useful for the war.

Dem Glorious Bums

The Brooklyn Amateur Cine Club will hold its 5th Gala Nite on the evening of April 14th. The affair will be held at the St. Felix Playhouse in Brooklyn, N. Y. Six films will be screened. They are: "Land's End" by Frank E. Gunnell; "A Letter" by Henry E. Hird; "A Day at the 200" by Walter Bergmann; "Summer Rhapsody" by Charles H. Benjamin; "Jewels of the Sea" by William W. Vincent, Jr.; and "Good Housekeeping" by Martin Sternberg. Oh, yes, admission price is 55 cents, according to Charles H. Benjamin, chairman of the program committee.

Philadelphia Club Elects

Following are the newly elected officers of the Philadelphia Cinema Club who will assume their duties this month: Arthur J. Hurth, President; James R. Maucher, Vice-President; Wilmer D. Coles, Secretary; William Brink, Treasurer.

At the club's last meeting the following films were shown: "A Day at the Zoo," "Down East," "Hard Alee," "Shadow's Bones" and "Baptism of Fire."

Utah Amateur Movie Club

Highlighting the March meeting of the Utah Amateur Movie Club was the discussion, led by Dr. S. Kenneth Robbins, of a script being prepared for the filming of the dental assistants of the city. It is a film that will depict the duties and activities of this group.

Also on the program was the screening of three films: "The Stork Arrives" by Wendell Taylor; a tour of the Nation's Capital and a nature study by Mrs. D. H. Cameron.

San Francisco Club

One of the most interesting films ever shown to its members was one depicting the collapse of the Tacoma Bridge. It is a film that has not been shown to the general public. It not only shows the collapse of the bridge, but contains shots made in a wind tunnel at the University of Washington in which was constructed a 100-foot model of the bridge.

Los Angeles 8 mm.

HIGHLIGHTING the March meeting of the Los Angeles 8 mm Club was a practical demonstration of the use of panchromatic make-up for color photography by Abe Shore of the Max Factor Company.

Four films were then screened. They were "Merry Christmas" by Fred Evans, "Gill's Pride and Joy" by Merwyn Gill, "Autumn in Ohio" by J. R. Boaz, and "Examiner Open Swim Meet" by Merwyn Gill.



Syracuse Movie Makers Get Together For Dinner.

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For over two years, thousands of AMPRO 16 mm. sound projectors have undergone gruelling tests—from arctic wastes to South Pacific jungles, on aircraft carriers, destroyers, submarines—under blazing sun and in subzero temperatures.

Out of this cruel laboratory of war have come sturdy, practical 16 mm. projectors exceeding even prewar AMPRO efficiency. Today these "war-tested" AMPRO machines are being made now exclusively for the United Nations armed forces. *When peace comes—they will be available for bringing new worlds of entertainment and education to the home.* Write today for Ampro catalog of 8 mm. silent and 16 mm. silent and sound projectors.



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Agricultural Motion Pictures and the War

(Continued from Page 130)

Home on the Range was produced when the meat shortage was foreseen to show what the stockmen of the West were doing about it. It points the way to increased production through practices advocated in the government's range program, the realities of properly located water holes, windmills, watering tanks, deferred grazing, and contour farming.

Farm Battle Lines shows why it is essential for the South to produce more fats and oils; how the South can make a decided contribution to the war effort by producing more of the foods needed in the food-for-freedom program—milk, meat, eggs, vegetables—and that sound farming methods and conservation practices will help the farmer bring about these increases.

Live at Home is designed to encourage farmers to grow more foodstuff at home; a couple of cows, a litter of pigs, a flock of chickens, the orchard, the garden, will provide an abundance of milk, butter, eggs, meat, fruit, and vegetables. It further points out that living at home is not only profitable, but patriotic as well, for every pound of food produced for use at home releases that much for the men in our fighting forces.

In the how-to-do-it group are such films as the following:

The Farm Garden presents the fundamentals of garden husbandry, with particular reference to the farm garden and the national food emergency. It shows how to plan a garden, prepare the ground, when and how to plant the seeds, how to treat to prevent rot and blights; how to transplant, thin, cultivate; and to control pests and diseases, ending up with rewards of good gardening.

Hemp for Victory tells how the war cut off our supply of East Indian coarse fibers, making it necessary for American farmers to supply the urgent needs of our Army and Navy, as well as civilians, with American grown hemp. Small amounts of hemp have been grown for years in Kentucky and Wisconsin, and the farm practices of these hemp growers are shown with the idea of encouraging farmers in other states to grow hemp to meet the war emergency.

Good examples of morale-building films are:

The Farmer's Wife—A documentary tribute to the farm women of America, and an explanation of their part in winning the war. It shows the farm wife accepting the increased work and responsibilities of wartime farming with a spirit that is an inspiration to young and old alike.

Henry Browne, Farmer, shows a representative Negro farm family doing its part in the agricultural war production program, while a son trains

with the 99th Pursuit Squadron near Tuskegee, Alabama. Though made primarily for Negro audiences it is also popular with white people, and undoubtedly has made for further understanding between the races.

Several of our agricultural films, produced with Spanish narration, have been used to promote friendly relations with our Latin-American neighbors.

Democracy at Work in Rural Puerto Rico discusses the agricultural resources and problems of Puerto Rico. It shows how the rural people, under democratic guidance, are improving livestock, bettering farm and conservation practices, introducing new and developing old handicraft industries, and bettering the lot of farm youth through 4-H Club work.

Los Clubs 4-H en el Suelo de Coronado portrays the activities of Spanish-American 4-H Clubs in New Mexico and includes scenes illustrative of the agriculture of the American Southwest.

The foregoing types of films have been aimed primarily at the farmer. Others are designed to meet the needs of the public in general for information on the food situation. For instance, a film, *It's Up to You*, goes into the whys and wherefores of the point-rationing system and the evils of the black market in meats. *Canning the Victory Crop* shows in detail how to can fruits and vegetables, and *Dehydration* shows the advantages that have accrued through the development of the dehydration industry as a war measure, and what it means to our food economy of the future. Another film in production discusses the ways and means of storing the surplus from victory gardens for winter use.

The Department's own films are not made specifically for use in foreign countries. However, the Coordinator of Inter-American Affairs has reedited and translated a large number of our films into Spanish and Portuguese, and we are now about to begin production of 10 subjects for the State Department for issuance in Chinese. The Canadian and British governments have also duplicated our films for distribution in those countries. Sweden, South Africa, India, Egypt, and China also have acquired prints or duplicate negatives. In fact, without promotion of any kind, Department of Agriculture films have reached into practically every country in the world, the axis and occupied countries, of course having had access to them before the start of the war.

Our own Spanish-speaking population of the Southwest has not been forgotten. Many of these still use the language of their ancestors. To reach them in the language they understand best, several films in the Spanish dialect of the region have been made.

The Department of Agriculture, however, has not been alone in the production of films for the war food program. Britain and Canada have been wide awake to the need for motion pictures in informing their people con-

cerning the food problems, and have produced numerous training and informative films that are now being circulated in this country. Among them are *Food—Weapons of Conquest*, which brings out clearly the importance of food in this war; *The Battle of the Harvest*, showing Britain's and Canada's food production efforts; *Mrs. T. and Her Cabbage Patch* and *Dig for Victory* on the planting and care of gardens; *Fighting Fields*, showing how Scotland had increased its yield from the soil; *Dinner at School*, *Miss T.*, and *Eating at Work* on diets and nutrition, and many how-to-do films on a variety of subjects, such as the care of poultry, clearing land, storing vegetables, rabbit raising and even how to spade up a garden. Such films have undoubtedly been of tremendous help in making the British Isles more nearly self-sufficient so far as food is concerned.

Industry, too, has taken a leading role in producing motion pictures to help solve the farm and food problems created by the war. Many excellent pictures have been made by industry, and it is noteworthy that most of them are devoid of advertising plugs that unfortunately in the past have made many otherwise excellent pictures unacceptable to many groups. I shall mention but 2 or 3 of them, not as best examples, but simply to illustrate how industry is cooperating in the war effort on the food front producing films on the subject matter foreign to the business in which they are engaged. *Soldiers of the Soil*, a 3-reel film by the du Pont interests, is an excellent exposition of the reasons why farmers of draft age should remain on the farms until or unless they are inducted into the armed forces. Through the dramatic appeal of a blinded soldier, the young farmer is made to feel that he is engaged in the production of what our President has said is a decisive weapon of war, that his training and experience are needed on that production line, that he may hold his head high in the knowledge that he is truly a "soldier of the soil."

In the field of nutrition, the Westinghouse Company's film, *This Too Is Sabotage*, does a good job of selling the fact that a well-balanced diet is essential to health and happiness. This film is shown to employees in over a thousand war plants. The lunch hour is a favored time. Pre-shift showings to early arrivals are well attended, though many prefer to stay after a shift. The Ralston Purina Company has produced *Twenty Fighting Men*, an inspiring story of farm management and of the potentialities of increased livestock production through efficient feeding methods. Of course, this is for farm groups, and it is said to have worked wonders in the areas where it has been shown. None of these films contain advertising matter, simply the name of the company as the sponsor.

(Continued on Page 137)

G-E Photoflash Movie Is Hailed by Photo Experts

RELLEASE of a new educational sound-on-film movie featuring the technical aspects of flash photography has just been announced by Photolamp Division of General Electric Company at Nela Park, Cleveland.

The 3-reel, half-hour vehicle—processed in 16mm. and 35mm. sizes—is intended for immediate use by photographic schools of all branches of the military services. It is also designed to educate countless professional and amateur photographers on how better flash pictures may be taken.

Previewed by photographic experts of the armed forces at Washington, D. C., at Wright and Patterson army air fields at Dayton, Ohio, the film made its formal debut recently at Roosevelt Hotel, New York City.

Attending the premiere were members of the trade and daily press and key representatives of the photographic industry. Critics hailed the new film as an effective tool in educating photographers on the matter of using flash more intelligently.

Split-second action of modern high-speed camera shutters and brief flashes from photoflash bulbs have been slowed down to an easily visible "crawl" in the picture. The slow motion sequences permit the human eye to "take its time" in following the swift action of various camera shutters, of the performance of popular flash bulbs, and of high-precision timings. This has been achieved through adroit use of extremely high speed motion picture photography.

To partially "freeze" the lightning-fast action of shutters and flash bulbs, the producers were compelled to film some of the sequences at speeds running up to 3000 frames per second. Photoflash, incidentally, provided the tremendous amount of light required.

The new sound movie features the operations and characteristics of between-the-lens and focal plane shutters, various midget flash bulbs, and the relative merits of sundry reflectors—all with relation to one another. Detail action is shown through deft use of animation.

Photographic "stills," it was pointed out at the film's premiere, are playing a significant role in virtually all operations of the armed forces. Countless flash pictures are being taken by the military for public consumption as well as for illustration in connection with case histories of all kinds.

The new G-E photoflash movie was co-ordinated and produced by Loucks & Norling Studios of New York City. The high-speed sequences were made by Henry Lester, widely known photographer and technician for the Morgan & Lester firm of New York.

Script for the film was written by G.E. Lamp Department's P. A. Carson, Frank E. Carlson and Don Mohler. The entire production was supervised by O. H. Young, manager of the Photolamp Division of G.E. at Nela Park.

NOW IT'S AN "OSCAR" FOR DeVRY-FILMED* *Desert Victory*



Rephotographed from British Illustrated Weekly

The war film epic—95 per cent of which was "shot" with DeVRY Model A 35mm. motion picture cameras, according to the man who directed it—has now achieved Movie-dom's most coveted honor—an "Oscar" for 1943's Most Distinctive Achievement in Documentary Feature Production from the Academy of Motion Picture Arts and Sciences.

"Oscar" for black and white cinematograph went to Art Miller for *THE SONG OF BERNADETTE* (20th Century-Fox) and for color to Hal Mohr and W. Howard Greene for *PHANTOM OF THE OPERA* (Universal Pictures)—films and men to whom DeVRY took occasion to tender "orchids" in its 1943 series of advertisements featuring Major Budget Productions.

DESERT VICTORY'S list of honors is an increas-

* "For field service our cameras had to be light and rugged. I estimate that 95% of DESERT VICTORY was ground through DeVRY'S."
—Lt. Col. MacDonald.

ingly distinctive one. In addition to the Academy "Oscar", it also was adjudged the best Documentary of 1943 by the National Board of Review of Motion Pictures.

Out of 14 pictures chosen by the Canadian Department of National Defense for showing to their troops, DESERT VICTORY is one of the two non-Hollywood films named.

To Lt. Col. David MacDonald, Hon. A. S. C., and those intrepid heroes who filmed DESERT VICTORY under fire—to Arthur Miller, Hal Mohr and W. Howard Greene—as well as to those others who received 1943's Academy Awards, DeVRY'S congratulations. Our engineering and manufacturing aim is to continue to provide cameras, projectors and sound system capable of properly filming and screening their finest achievements.

DESERT VICTORY—16mm. sound-on-film is available at \$2.50 per day through DeVRY. Sale price of complete film, \$66.50.

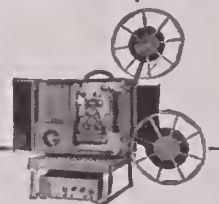
DeVRY CORPORATION, 1111 Armitage Ave., Chicago 14, Illinois



Star awarded for continued excellence in the production of motion picture sound equipment.



DeVRY
16mm. Sound-on-Film Projector



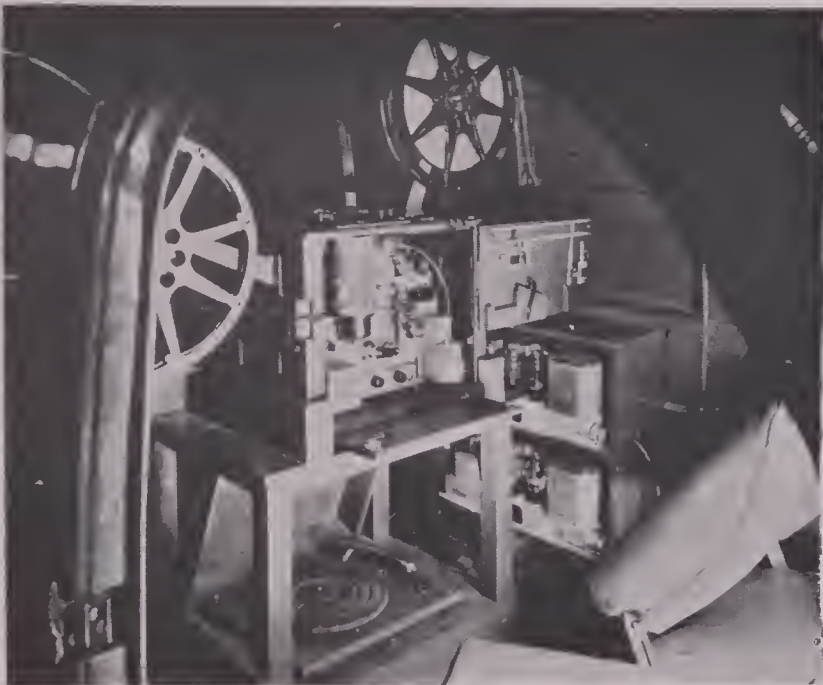
DeVRY 16MM SOUND-ON-FILM PROJECTORS ARE PRECISION ELECTRONIC INSTRUMENTS

Harvard Film to B & H

A notable historical film, *THREE CENTURIES OF MASSACHUSETTS*, produced by Harvard University and narrated by Prof. Albert Bushnell Hart, has been sold to the Bell & Howell FILMOSOUND LIBRARY. The film is at present eight reels in length, and will be cut down and re-edited by the new owners. Meanwhile the original eight-reel version continues to be available through the same source.

Railroad Picture

THE STEAM LOCOMOTIVE, a new sound motion picture dramatically describing the mightiest self-moving power plant yet built by man, has been released by the New York Central System, running 720 feet, 16mm. black and white. The film follows *THE FREIGHT YARD* as the second in a series designed to show "behind the scene" phases of modern railroading.



Above is group of mobile Filmosound Units used by Royal Canadian Air Forces. At left is view of equipment within the truck.

Filmosound Replaces Military Bands

THIRTY-TWO Royal Canadian Air Force stations in Canada each have a band—without the benefit of bandmen and instruments!

Soon, by means of motion picture film, all air force stations across Canada will have this same type of mechanized band music, played by the outstanding band of the RCAF for as long as forty-five continuous minutes, and more ably pre-

sented to a larger group than ever before.

The answer to this enigma lies in still another wartime use of motion picture film—the broadcast of martial music on a Bell & Howell Filmosound for the entire regiment.

The Filmosound unit is demountable, and can be used to project motion pictures with sound accompaniment in bar-

racks, doubles as a public address system, and is an over-all unit with entertainment and educational utilization. The current news is broadcast to the entire forces; the officer in charge can deliver his orders by means of the Filmosound public address system; and route marches, ceremonial parades, drill ground training, and lectures now reach the boys in the RCAF via the miracle of B&H motion picture equipment.

AnSCO Gets "E"

EMPLOYEES of AnSCO, manufacturer of photographic materials, have been awarded the Army-Navy "E" for "great accomplishments in the production of war equipment." This announcement was made recently by Under Secretary of War, Robert P. Patterson.

Formal presentation by representatives of the Army and Navy was made at AnSCO in Birmingham, New York on March 27th.

Expressing his confidence that the company's outstanding record will bring victory nearer by inspiring others to similar achievements, the Under Secretary of War said, "The award symbolizes your country's appreciation for the achievement of every man and woman of AnSCO."

Since Pearl Harbor approximately 75 percent of AnSCO's production has been for the government and essential war industries. Its vast camera plant is now engaged 100 percent in the manufacture of precision instruments for the Army Air Forces and the Navy. Included in its wartime production are sextants which permit fliers to determine their position anywhere over the earth's surface under all weather conditions.

Another device in production for some time is the driftmeter which automatically computes wind drift and is used by aerial navigators to keep their planes flying proper courses. AnSCO Color Film, the first such film which can be developed in the field, has also been an important contribution to the armed forces.

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Agricultural Motion Pictures and the War

(Continued from Page 134)

With the start of the war, the country was faced with the need of converting not only its industry but its agriculture to the needs of war. At no time in history had we been faced with such a stupendous task. In agriculture it meant that some 35 million farmers were to be stimulated to productive activity along planned lines. It was a job made to order for motion pictures. We planned plans and dreamed dreams of what could be done, if funds were made available with which to produce pictures to help create this vital weapon of food in ample kinds and quantities. But right here we had our first taste of priorities! Our studio and laboratory and 14 members of our production staff were taken over by the Coordinator of Information (now the Office of Strategic Services) for more vital needs. This left the Motion Picture Service of the Department of Agriculture with a skeleton staff, inadequate production equipment, and no suitable working space. However, we did have some cameras, editing equipment, and trucks and with this as a nucleus we rented a building vacated by the Paramount Exchange in Washington and proceeded with our production from there.

All government work, of course, is dependent upon action by the Budget Bureau and Congress, and it was deemed necessary to reduce the appropriation for motion pictures of the Department of Agriculture. With the smallest appropriation in years we are striving to do an enormous wartime job. Our film activities of course have had to be reduced, and now the program of the oldest motion picture service in the government is a pigmy as compared with programs of the Army, Navy, and the Office of Education. However, we manage to produce about 20 pictures a year.

At present the Department's production staff consists of 11 directors, editors, cameramen, and technicians. This staff does necessary research work, writes scripts and scenarios, photographs, and edits the pictures. Sounding, optical work, cartoon, animation, and all laboratory work are done under contract. While not so satisfactory in some respects as having this work under immediate supervision under one roof, it has certain distinct advantages in that last-minute changes, which so frequently would hold up production, are not so easily made.

Our 30 years of experience have taught us the necessity of having script fully prepared and approved before production begins. We have worked out a procedure, therefore, that we endeavor to follow as far as practicable in every production. The first step is the preparation of a so-called Project Proposal, which is designed to bring out

(1) the subject matter to be covered, (2) the purpose of the film—what it is hoped to accomplish, (3) the wartime significance of the subject, and (4) a synopsis of the treatment. When a film is proposed and sponsored by an agency of the Department, or where the film contains specific subject matter, the script is carefully reviewed by subject matter specialists and finally approved by the Director of Information of the Department before shooting is begun.

Most of the scenes for Department pictures are, of course, taken in the country, though urban activities are by no means out of the picture. It is surprising how agriculture touches the lives of all of us. Our food, our clothing, and the houses we live in come from our farms and forests. So the problems of agriculture are not the problems of the farmers alone. They concern each and every one of us, for if the boll weevil destroys the cotton crop, we lack cloth, if the foot and mouth disease should destroy our cattle, steaks would be curios instead of rarities, and if we permit forest fires to destroy our trees, our lives would be handicapped from cradle to coffin.

But to return to our subject, a field photographic crew usually consists of 2 to 3 men, director, cameraman, and assistant. Where technical subjects are to be filmed, a specialist makes a fourth member and if sound on location is required, a sound crew of 2 men completes the crew. General locations are selected in advance, but it is up to the crew members to make detailed arrangements on the spot.

Shooting finished, the director with the assistance of the cameraman proceeds to edit the picture and complete the final script. Music may be furnish-

(Continued on Page 138)



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RELLEASE of the color motion picture **EMPIRE ON PARADE** has just been announced by The Princeton Film Center, of Princeton, New Jersey.

Telling an absorbing story of the immense resources of the Northwestern area of this country served by the Great Northern Railway, the film is an inspiring document of a vast section of the nation now supplying many of the essentials of war.

EMPIRE ON PARADE is 40-minutes in length. Sixteen millimeter sound prints in full natural color may be secured by writing directly to The Princeton Film Center. Users are asked to pay only a nominal service charge and transportation costs.

Enough steel to make two battleships is produced every month by the open hearth furnaces at the Rouge plant of the Ford Motor Company.



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Agricultural Motion Pictures and the War

(Continued from Page 137)

ed under contract or selected and arranged by our own staff. Recording may be done under contract or by our own sound recording unit, depending upon where desired talent is located. The finished picture is then presented to various interested agencies for final approval. Usually, if the steps outlined above have been followed, acceptance is unanimous, but occasionally haste or some other element has permitted a false note to creep into the film. However, all these safeguards make it fairly certain that revisions, if necessary, will be minor and that the picture is true, factual presentation of the subject covered. For incentive, morale-building, and certain other types of films where subject matter is not of first importance, the treatment varies, of course. Such films may be a combination of field and studio shots, acted and real life scenes, and cartoons.

Not all films are made by the Department's own staff. A production contract is entered into each year with some commercial producer as a result of bids. Last year 4 pictures were made under contract with Wilding Picture Productions, Inc., of Chicago.

Distribution of Department films is conducted principally through nontheatrical channels, the primary aim being to reach adult farm audiences. However, because of the wide application of many of the subjects covered, theatrical distribution also is obtained on some of the films. And, of course, prints are sold. Under contract with the Department, Castle Films handles these sales.

The nontheatrical distribution is conducted through various field offices of the Department, the state extension service, and through some 50 film libraries of universities and colleges.

Theatrical distribution is cleared through the OWI.

The number of prints made available for distribution varies with the funds available. Usually, on films having general application, 100 16-mm prints have been placed in distribution.

In closing, I would like to say that motion pictures are doing a great deal to help agriculture in its war job. Judging by audience reaction, the millions who see these films most certainly are helped and informed and fortified in their determination to carry on, come hell or high water. Though the Department's own film activities have been limited by small appropriations, the British and Canadian governments and American industry have filled the breach to some extent. However agriculture at war presents an unlimited field for training and instruction by motion pictures that not only will fashion a vital instrument of war, but will help to create a countryside where soil fertility is maintained by contour plowing and terracing; where sleek animals feed in lush pastures, where tree planting is restoring the water level in spring and stream, and wild creatures again have a chance for life; where winds no longer are permitted to carry away the top soil, and gullies are a thing of the past; where the water is clear and the air is pure; and where a farmer may be proud of his job. Such is the kind of America that agriculture films can and should help to fashion.

Heavyweight Lou Nova Is a Movie Maker



Fistically-capable Lou Nova is photogenic in a great big, ruggedly courageous he-man way—he is also a movie-maker of no mean accomplishments. For his fistic prowess, it will be remembered that Lou gives considerable credit to the art of Yogi. For his movie-making achievements, Lou pays generous tribute to his 16mm. DeVry equipment. With Lou and the eager youngsters at his Van Nuys home is shown DeVry's genial west-coast representative, Joseph E. Norman of Hollywood.

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- ★ Auricon 16mm. sound-on-film recorders and cameras are serving the Nation's War effort with Military and Government Film Units, and with civilian organizations producing essential morale and industrial training films. If your work in such fields makes you eligible to purchase new equipment, we invite you to let our engineers show you how Auricon portability and professional performance will simplify your recording problems.

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Letters from the Battle Fronts

AT the present time there are 38 members of the American Society of Cinematographers in the armed services. They are scattered all over the globe. From time to time we hear from them and pass their letters on to the readers of the Cinematographer. This month we have messages from Captain Lloyd W. Knechtel of the Signal Corps and Major Elmer Dyer of the Army Air Forces.

Captain Knechtel says:

Just a note to say hello and to let you know I have been in Italy since the fall of Naples last October. Am in charge of a photographic unit over here and we have seen our share of action. Several of the photographers have been killed in bombings and from artillery fire, and several have been wounded. I suppose the close ones don't count—and there have been plenty of close calls experienced by all of us over here. The going is plenty tough in the mountain fighting and the Sauer Krauters are giving the Allied troops some stubborn resistance. There has been lots of rain and mud and now we have the bitter cold that makes me think fondly of the virtues of good, old California.

Best wishes and good luck to my fellow
A.S.C. members.

Major Dyer believes in brevity. He writes:

Just a line or two to say hello! Hope everything is going all right over there. It's plenty tough at times over here. Please give my best wishes to the boys at the A.S.C. I expect to return to the States in about thirty days although I can't tell for sure. We are making a big film here and it will be for release to the public about next summer. It's really colossal.

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British Information Services Announce New Sound Films

THE British Information Services have just announced the new 16mm. sound film releases of its film division which are now available for either purchase or rental. For information regarding rates, etc., write to the Film Division, British Information Services, 30 Rockefeller Plaza, New York 20, N. Y. List of new releases follows:

"LETTER FROM IRELAND"

(As Distributed to U. S. Theatres by Paramount Pictures)

What your boy and thousands of other American soldiers are doing over there. How they are trained, their living conditions and the recreations they crowd into their off-duty hours.

"CAMERAMEN AT WAR"

A tribute to the men whose job it is to get the action onto film. It shows them in action, armed only with their cameras, and some of the famous scenes they have shot right in the forefront of battle.

"UP PERISCOPE"

The tense story of a British submarine on patrol in the North Sea. An enemy ship is successfully attacked. The submarine dives and awaits the counter-attack from destroyers.

"TANK PATROL"

A dramatization of the story of a tank and its crew, stranded in the desert after an action. How they elude the surrounding enemy and rejoin the British lines.

"COME AGAIN"

From different parts of the Empire to England, which they had left many years before, come three men of the fighting services. They discover how war has altered a country which they once believed would never change.

"NATIONS WITHIN A NATION"

How the exiles of the nine European nations which now have their recognized Governments in London carry on their own national life and maintain some of their national institutions in Britain.

"AIR OPERATIONS"

Two-reel version of *Target for Tonight*. Suitable for short war-plant shows.

BRITISH FILM MAGAZINES

A new series containing striking and unusual items of information from all corners of the home and war fronts, from the production line to battle.

Number 1

Good News for Spiders

Spiders' webs become threads for gunsights.

Bases for Bombers

Making runways out of mud flats for U. S. and British bombers.

Ancient Craft Joins Warfront

Charcoal burners become essential war producers.

(Continued on Page 142)

PERFECT FOCUS

day and night
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—GIVE.

New British Films

(Continued from Page 141)

Number 2

Science Versus Sand

How filters help planes and tanks fight desert warfare.

Factory Front

Housewives working part time in factories to speed production.

Tugboat Annie

A famous Hollywood property turned into a weapon of war.

Number 3

Camouflage

Fisher folk make nets to hide the guns.

Food Front

Priority treatment for women war workers at the stores.

Turn Around

Dock workers speed up for victory.

Number 4

Ply in the Sky

An exciting account of how the world's fastest plane, the British Mosquito, is built from laminated Canadian birchwood.

A Cautionary Tale

An amusing cartoon with a moral in rhyme—bringing home to war workers the danger of blood poisoning from neglected minor cuts.

Props

British forestry helps the war effort—young spruce and fir trees are felled to make much-needed pit props for the mines.

Number 5

Diamond Cut Diamond

British girls in their teens are already doing an important war job, mostly under the microscope, by making diamond dies for drawing very fine wire.

Song of the Islands

West Indians in London broadcast to their far-off homes a song about themselves in their traditional Calypso style.

Showdown

Fascinating details of the making of anti-tank mine detectors, equipment which saves thousands of lives of our advancing armies.

New du Pont Plant

CONSTRUCTION has started at Towanda, Pa., on a new du Pont Company Patterson Screen Division plant which will manufacture luminescent chemicals.

The Patterson Screen Company, acquired by E. I. du Pont de Nemours & Company last July, pioneered the manufacture of fluoroscopic and X-ray intensifying screens, and has operated its present plant here since 1914.

C. V. S. Patterson, manager, said today that the new plant is expected to be completed at an early date and will make phosphors in sufficient quantity to assure American industry of an adequate supply of the type of materials hitherto imported solely from Levy & West, London, England.

New Filmosound Releases

POT O' GOLD

No. 4592

8 reels

Light-hearted nonsense intermingled with equal quantities of hit tunes and ably put across by favorites should make POT O' GOLD unusually popular. Happy-go-lucky nephew of a rich manufacturer of health foods finds romance and adventure on the air waves. "The picture is especially recommended to all who like something decent, care-free and propagandaless."—Motion Picture Review. (James Stewart, Paulette Goddard, Horace Heidt and Charles Winninger.)

WHO DONE IT? (Universal)

No. 2442

8 reels

Abbott and Costello, Hollywood's best-liked and best-patronized comedians are again on the run. The story, a murder mystery, placed Bud and Lou in the hazardous profession of amateur detectives. A howling travesty on murder-mystery dramas. (Bud Abbott, Lou Costello, Patric Knowles, William Gargan, Louise Allbritton.) Available from May 6, 1944, for approved non-theatrical audiences.



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AKELEY CAMERA, 35-50-100-150-300-425MM. LENSES, 5 MAGAZINES, MOTOR, Tripod, many attachments; De Brie, Model L, Tachometer, Friction and crank Tripod, 110 volt motor, Mitchell type mounts, magazines; Western Electric, double system 35mm. sound editor; Holmes 16mm. sound projector; low intensity arc; Duplex 35mm. printer for Sound and Picture; Set Mitchell Bi-Pack double throat Magazines; set of Effect Prisms and attachments for Mitchell—LENSES—28mm, 50mm, 75mm Pan Tachar Fl. 8 in barrel; Taylor Hobson Cooke 5 1/4" F2. Series O, in barrel, like new; Cooke 6 3/4" F2.5 Eyemo C mt; Cook 6" F4.5 Eyemo A mt; Single lens and Turret Eyemos 71C—35mm F2. 47mm F2.5; 6" Cooke F4.5 case. WANTED—16 and 35 mm Silent and Sound Movieolas. WE BUY—TRADE—SEND US YOUR LISTS. CAMERA MART 70 W. 45th St., New York City

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Kodak's K-24 Aircraft Camera is completely automatic. In reconnaissance, you push a switch button on your "stick" and the camera, in the nose or tail, clicks away. In a bomber, it is in the plane's belly, connected, through complex electrical controls, with the bombsight itself. Its focal plane shutter, power operated, has speeds of 1/50, 1/450, 1/900, and "time." It is

fitted, as are most other aerial cameras, with Kodak aerial lenses, including Kodak Aero Ektars incorporating elements of Kodak's revolutionary new optical glass . . . interchangeable in a range of focal lengths and speeds for different missions. Uses Kodak Aero Films in pre-threaded interchangeable magazines holding 56 feet, enough for 125 pictures, 5 inches square.



K-24 Aircraft Camera,
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Bombardier, at left, is hunched over his bombsight which is electrically coupled with the camera, automatically taking pictures every time bombs are released. At right is a gunner covering the nose with his "fifty."

TANGLING with fighters and flak while making a bombing run . . . or scurrying over enemy country at low altitude on a reconnaissance job . . . the last thing you have time for is "keeping a snapshot record of your trip."

Yet in reconnaissance, that's really what you're out for—and in bombing, you want to bring back "picture information" on the relation of your falling bombs to the target . . . for the camera makes a record of details you couldn't possibly see and remember.

Pretty hopeless, without a camera that "runs its own show" . . . Kodak's K-24 does just that.

On a reconnaissance flight—with no bombs to unload—you press a button for each picture, operating the fixed-position camera by remote control. Or, if you want a series, simply hold the button down, and the camera takes 3 pictures a second.

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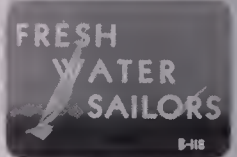
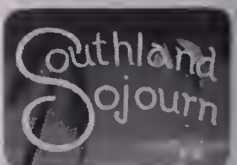


Bulletin! Abbott & Costello Lost in Jungles!

Help! Help! The boys are all tangled up with a tribe of Hollywood-style head hunters. Will they escape? Go to your nearest B&H dealer and order *Pardon My Sarong*. It's the latest Abbott & Costello howl to be released through Filmosound Library for showing at approved non-theatrical locations. A Universal Picture. Send the coupon for the Filmosound Library Catalog which lists and describes thousands of excellent films on almost any subject.

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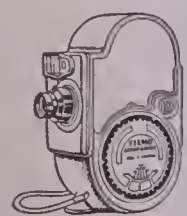
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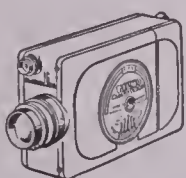


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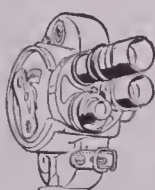
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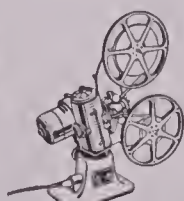
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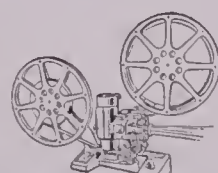
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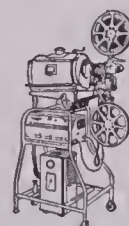
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In This Issue...

Cameramen at War

A Newcomer Looks at Hollywood



May
1944

Milestone of Progress



WHEN in March, 1944, the Academy of Motion Picture Arts and Sciences presented Du Pont with an award of merit for the development of fine grain film, it marked another milestone in the technical progress of the motion picture industry.

Pioneered by Du Pont, fine grain film made its debut in 1939. It so reduced the "rushing" noise caused by granularity of silver deposit in film coatings that "fine grain" soon became almost universal for Hollywood produc-

tions. Today, we hear the recorded voices and music of screen classics with an amazingly clear, lifelike naturalness. And pictures are sharper and more brilliant as well.

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Eyemo



H. S. Wong and his weapon—
a Model M Eyemo

This is H. S. "Newsreel" Wong's beat . . . the Salween front in Burma. Rugged terrain, weather, Japs haven't yet kept this intrepid newshawk from doing a brilliant job of reporting the war in Burma.

No, they're not planning this war to be easy on the newsreel boys. Every shot they get means sweat and danger and work. None of them have time to nurse inadequate equipment along. When news breaks, a man's camera must be ready to shoot.

That's why so many of the dyed-in-the-wool news cameramen . . . men like H. S. Wong (inset) who have been filming news for years . . . use Eyemo Cameras.

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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

MAY, 1944

NO. 5

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THE FRONT COVER is a snow scene from Paramount's "Road to Utopia," starring Bing Crosby, Bob Hope and Dorothy Lamour. Lionel Lindon, A.S.C., is the Director of Photography.



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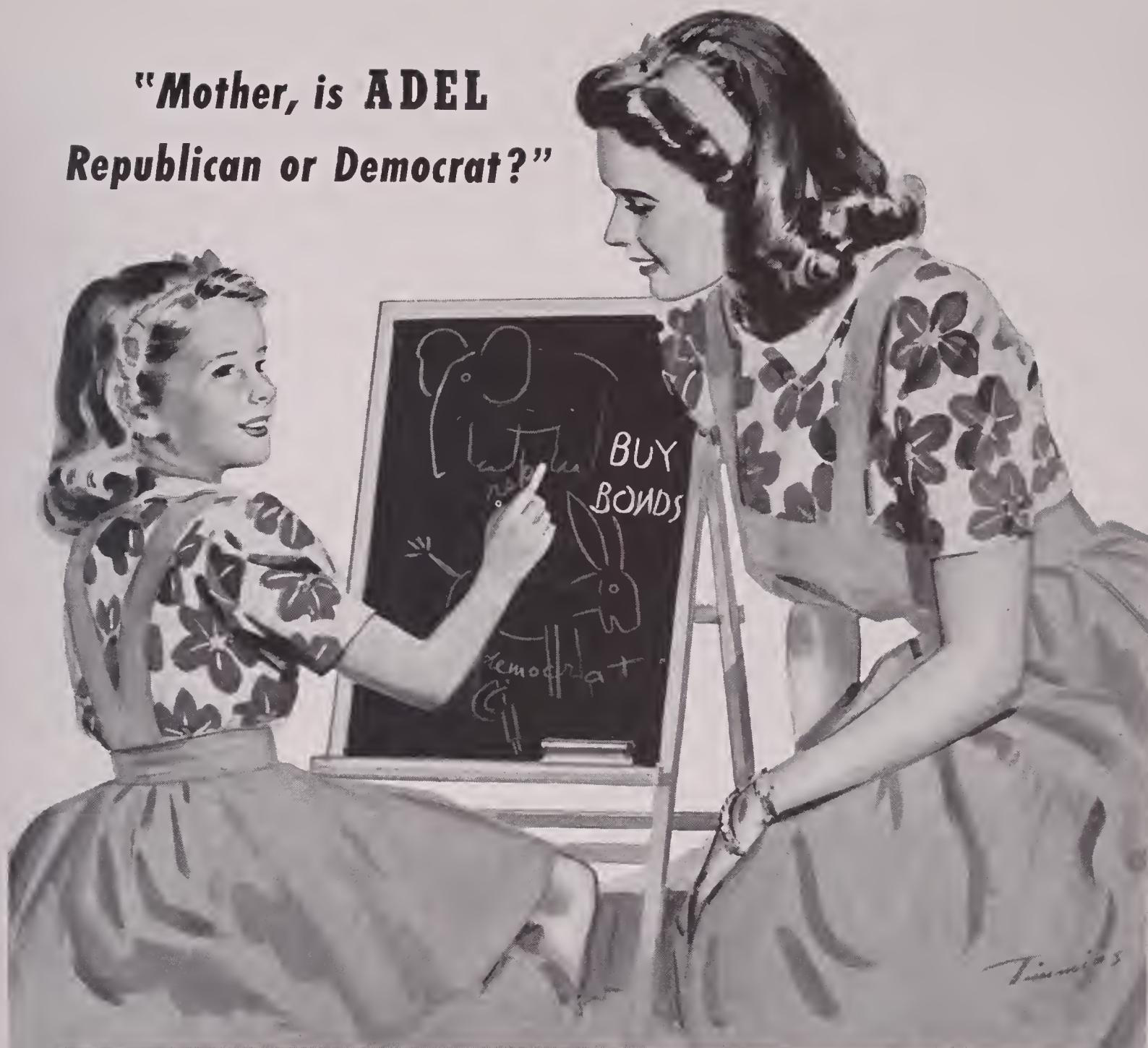
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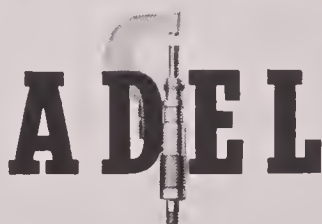
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Cameramen at War

By BURR MCGREGOR

Top, left, Technical Sergeant Jerry Joswick, member of 9th Combat Camera Unit, who made the amazing photographs of the attack on the Ploesti Oil Fields shown on the opposite page. Above is Captain Raymond Fernstrom, smiling from his hospital cot in North Africa while convalescing from wounds caused by shrapnel in a flight over the Mareth Line. (All photos from Army Air Forces.)

THERE were eight of them. Eight fearless men who laughed at danger and made it their business. The daily life of each of them was incomplete and irksome without some incident of danger to maintain their good humor. Dangerous missions were the tonic-experiences necessary to their well being and mental comfort. Combat photography at high altitude with the enemy's flak and bullets punching holes through their fast maneuvering planes had become a commonplace event that lacked the sharp edge of thrill.

By confronting all the dangers known to man from depths below the surface of the sea to heights miles high over the sea and earth, the photographic exploits of these men had contributed to science and entertainment.

Major John D. Craig had operated his camera from the slim little catwalk of the bomb bay to get a record of bombs falling away, to the target over Palermo when the Nazis filled the sky with flak and their own fighters were well above twenty thousand feet. The fighting whirled around well above twenty thousand feet of altitude where the thin atmosphere was more than twenty degrees below zero; a pleasant height to crash from, but lacking a couple of dozen ack ack and machine gun bullet holes punched

through the sides of the plane, a section shot out of the tail fin and one of the wing tips minus, everything worked out smoothly, and the crew landed back at headquarters altogether with good marks chalked up to their credit.

Before entering the Air Forces as a combat photographer Major Craig's whole career had been filled with thrilling action; photographing on the sea floor off the Cedros Islands of Mexico, where he learned to scare away man-eating sharks by blowing air bubbles at them; hunting lions in Africa; grizzly bears in Montana; tigers in India; and photographing high over the top of the world enemy fighters, amid every kind of explosive that could be used to bring him down. He is still looking for bigger thrills.

Major Sanford S. Greenwald, rounded out his civilian life as a NEWS OF THE DAY cameraman. A quiet unobtrusive sort of man with a kindly nature of gentleness, always alert for the dangerous opportunity that would give him the credit of one more "scoop" to add to his already brilliant record and to the confusion of his competitors.

With adventures now confined to "NEWS OF THE DAY" war records, Greenwald offered his services to the armed forces and was commissioned a

Major and transferred to North Africa on November 12, 1942, as commanding officer of one of the first Army Air Force Combat Camera Units to cover aerial operations.

Greenwald's keen perception of photographic news values and his daring in recording the hazardous-unusual was responsible for his assignment to the advanced unit of the Cairo Headquarters of the 9th U. S. Air Force, which at that time was supporting General Montgomery's Eighth Army in its drive on the Mareth Line. Greenwald's assignment was; "... to cover thoroughly with still and motion pictures the Air Force to which he was assigned, including combat operations in the air and on the ground; to secure photographic and recorded statistical information from pilots and crew members returning from combat and reconnaissance missions; to photograph damage to aircraft by enemy action; to record the handling of casualties; the conditions under which personnel and equipment operated, and in such a manner that the photographic records will be of such assistance in analyzing the reasons for failure."

When Greenwald's Unit went into action, Combat Camera Units were new to the Air forces. He was one of the first two motion picture units assigned to combat operations.



Greenwald, and his men, reported to the headquarters of Brig. Gen. Lewis Brereton, Cairo, Egypt, on November 18, and were then sent to heavy, medium and light bombardment groups as well as fighter squadrons to cover every activity of those organizations. Greenwald remained in Cairo where he coordinated the work of his Unit with the Headquarters of the AAF Motion Picture Division in Washington, and Units in North Africa.

Two other men, T/Sgt. Jerry J. Joswick of Chicago, Illinois, and Lt. James Bray, of Rochester, N. Y., were awarded the Distinguished Flying Cross and the Air Medal for their daring exploits, not only for their marvelous photographic records but for their cool, collected, efficient ability in downing Messerschmitt 109's after their supply of film had run out and they took over the guns of the wounded gunners. Lt. Bray was the first AAF Motion Picture Cameraman to down an enemy ship in this war. T/Sgt. Joswick was awarded his honors for the eight hundred feet of motion picture film he so successfully exposed regardless of the flak and smoke and bullets his plane plowed through. His film supplied the only continuous authentic record of the blasted Ploesti Oil fields.

Additional men were sent to Greenwald in December, 1942, and the unit then covered every activity of the Ninth Air Force, including the fall of Cape Bon, the invasion of Sicily and the pre-invasion bombing of Italy.

In this second group was Capt. G. I. Fernstrom, A. S. C. Fernstrom had already a reputation for daring photographic exploits that covered a major portion of the territory and oceans of both hemispheres, and his record as a Paramount Newsreel Cameraman was one of daring color.

Fernstrom had first cast his fortune

Top, left, a huge B24 slashing its way through smoke and debris thrown up from burning Ploesti oil fields on which it has just unloaded its bombs. Top right, from only 200 feet in the air Sergeant Joswick made this photographic record of damage done by the American bombers. Note the oil tanks blazing out of control. Bottom, right, Major Sanford S. Greenwald (left) congratulates Lieut. James Bray at ceremony in which Bray was awarded the Distinguished Flying Cross for shooting down two Messerschmitts in the Mediterranean area. Bray was a member of the 9th Combat Camera Unit in North Africa.



with the U. S. Signal Corps, and it was as a Signal Corps Photographic Officer that he had been sent to North Africa. After arriving there and meeting Greenwald, an old friend in many ventures, Fernstrom decided he wanted to fly. He requested a transfer to the Air Forces as a member of Greenwald's Unit. After the transfer had been effected, Greenwald sent Fernstrom to cover the pounding of Rommel's retreating forces being chased out of North Africa.

Fernstrom operated some of the time from the field in Ain M'llila, the home base of a certain very efficient Bombardment Group. Operations were carried on against Mediterranean shipping, Sardinia, and enemy airfields in Tunis and Biserte.

It wasn't long before this Group became known to the enemy as a hard hitting outfit and one to be dreaded. The tough reputation of the unit became the

(Continued on Page 162)



Aces Of The Camera

Ralph Staub, A.S.C.

By W. G. C. BOSCO

THE Fiftieth Anniversary of Motion Picture Exhibition in America is being celebrated this year. With so much competition from the gripping news of current world events, the occasion will, in all probability, not get the publicity and attention it would have received during more normal times, and which, as a milestone in the development of one of the most democratic and omnipresent media of modern times it so richly deserves. But at least one commemoration worthy of the jubilee has been prepared by that master of the short subject, writer-producer-director-cameraman, Ralph Staub, A.S.C. His current "Screen Snapshots" release should be seen by everyone, particularly by those who are a part of the industry whose first feeble flickerings and grow-

ing technical excellence is traced in Ralph's latest.

No dull, historical recapitulation, this reel is an exciting review of some of the great moments in the development, technically and artistically, of the film medium. Thanks to the cooperation of the Museum of Modern Art in New York, and a fortunate purchase from the estate of the late J. Stuart Blackton, Ralph has been able to include in his jubilee "Screen Snapshots" some particularly interesting footage. There is a scene of 'Black Maria,' Thomas Edison's first studio that was built in 1893; there is the scene of the first movie kiss, between John Rice and May Irwin, which offers not only a comparison of the motion picture drama of those early days, but also an interesting sidelight on what constituted celluloid passion in those pre-

Hay's Office days, and which was no doubt the reflection of the popular practice, or kissing technique, in vogue at that time. The kiss lasted thirty-eight feet. And at sixteen frames per, remember. It caused great agitation and consternation among the clergy and the 'right' thinking people of that day, but we venture the opinion that the modern audience, despite the anaemic kissing fare fed them today through the courtesy of the Hay's Office, will find in this thirty-eight feet of cheek-rubbing and ear nibbling nothing more than an interesting curiosity from the days of yore, and certainly nothing to stimulate the animal propensities.

Relating the progress of the motion picture to the historical events of those days the reel contains shots of Teddy Roosevelt and his Rough Riders leaving for Cuba in 1898, and the funeral procession through the London streets of "The Peacemaker," Edward VII.

Ralph reproduces for today's audiences some of the scenes in which appeared the great names of the past from the day the industry lifted its players out of anonymity and began to give them screen credit. John Bunny and Flora Finch, Clara Kimball Young and Sidney Drew are reborn for a new generation. Mary Pickford appears in scenes from a 1912 production, "Mender of the Nets," in which Lillian Gish, Lionel Barrymore and Bobby Harron had parts. Directed by the great D. W. Griffith, it included a promising, juvenile, Harry Carey.

There are scenes from the great pictures of Valentino, Swanson and Jolson. If you go to see this reel, and you most certainly should, you will also see the first animated cartoon, a crude effort made on glass; animated by means of sliding the figures about. In contrast, Mickey Mouse in "Steamboat Willie"; a synchronous musical to make us realize what a lot of ground had been covered up to that time.

Ralph concluded this reel with a scene that will no doubt be of great interest and usefulness to future historians of the cinema, and compilers of anniversary reels. In this scene, purportedly taken in the clubroom of the Screen Directors Guild, Ralph prevailed upon eleven of his fellow directors to appear. For the first time most of the audience will get a glimpse of some of the men who have helped to make motion picture history: Sam Wood, Irving Cummings, Cecil B. DeMille, Robert Z. Leonard, Alfred Green, Raoul Walsh, Edward H. Griffith. Eddie Sutherland, William Seiter, George Marshall and Richard Wallace. It is a scene unique in the annals of motion pictures, bringing together for the first time eleven such top-flight directors, all of whom have been in the film industry for thirty years or more. And it is a gracious gesture of recognition and appreciation to some of the men who have made big contributions through the years to make the motion picture what it is.

As the writer-producer-director-cameraman for Columbia of "Screen Snapshots," which is now in its thirteenth

(Continued on Page 170)



A Newcomer Looks At Hollywood

By EARLY CANTRELL

NOW don't get me wrong. I love Hollywood. Hollywood! . . . the place where men have arms and legs and brains like in any other place, but where they have only one idea.

Hollywood! . . . the land of "chivalry." "Chivalry" in Hollywood is when a man wants to protect a girl from men who have ideas, because he has the same idea himself. The place I, and a lot of other females, and males, figured on knocking for a loop the minute we stepped off the train with our hearts aflutter, and stars in our new dark glasses.

Yessir, I sez to me, the first thing to do is to get into the theatre and be seen, and "they" will come for you. Don't go to them, I sez, but let "them" come to you. (Coy, eh?) That was before I knew what the "theatre" in Hollywood meant. Coming straight from playing stock on legitimate stage in the South and East, I naturally was not prepared for the way they do things backward out here. You see, instead of the stage "producer" paying you to act, it seems you have to pay the "producer" to be in his play. Either that, or while you're sitting still

stunned from this sudden about face, you suddenly look up and lo! there's that familiar gleam in his eye and he leaps across his office—(that is, if he's young enough to leap, or fortunate enough to have an office)—and pulls up a chair, takes your hand tenderly, and says, "Of course, honey, we might work out some kind of a deal. If you could come every day and type or answer the phone for me . . . well, you really wouldn't have to type or answer the phone, you could just come . . ." Now it's your turn to leap, sister, unless you're better than I am at handling a boudoir commando.

Now, not being one to sit back on my haunches and wail because sex has reared his . . . uh . . . it's beautiful head, I start for Pasadena Playhouse, where I read and get myself a part in a play. Now, an actress of any experience knows when she's doing a good job, and vice versa. This case was no exception. I knew I was doing a good job. The part was small, but "meaty," and very dramatic. In fact, I died in the play, and oh, how I love to die, especially if I have to weep before I kick off, and gnash my

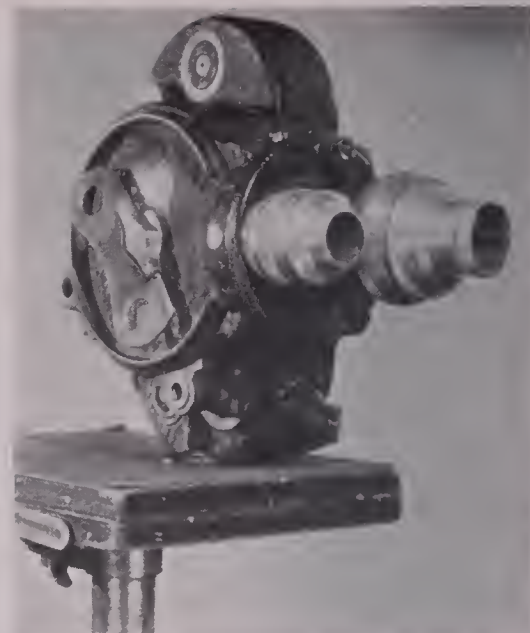


Top, Miss Cantrell and Lee Garmes, A.S.C. Bottom is Director Andre De Toth. Miss Cantrell says Garmes and De Toth are friendly, capable, sympathetic when testing a newcomer.

teeth and beat my bosom. (In this part I gnashed away my uppers, and still carry the etchings of black and blue marks from beatings . . . but don't ask to see my etchings.)

So, anyway, here I am knocking myself out, dying all over the place, when one of those talent scouts saw me and rushed me into his studio to his boss; he

(Continued on Page 164)



Left, Richard Thomas, inventor of Thomascolor checking a new Thomascolor lens on a standard motion picture camera. Above, a Bell & Howell 16 mm camera equipped with Thomascolor 1-inch and 2-inch lens mounts, on a turret.

Thomascolor

By ALVIN WYCKOFF, D. Sc., A. S. C.

LIKE Argus, the mythical character of ancient Greece, a giant of vast strength with eyes that let him see everything, Richard Thomas, after fifteen years of hard work and heartbreaking disappointments, has developed a color unit that can be attached to any camera of standard make, still or movie, in place of the regular lens and faithfully "see," and record on film, ALL the color of any object before it. The numerous patents granted by the United States Patent Office to Thomas, after a thorough search through all the records of optical and photographic research, makes his process one to carefully study among color processes.

The United States Army Corps has long sought some simple, infallible method of detecting camouflage, a process of photography in color that would supply commanding officers in the shortest possible time accurate information about the enemy's gun emplacements and other secret positions; not that processes of revealing color photography were not available to the Army Command; they were, but the time of processing between negative exposure and projected results required more time than is often feasible.

Air Chief General Arnold detailed two officers from Wright Field to conduct exhaustive tests of Thomascolor and sent an Army equipped bomber for aerial photography to Los Angeles.

Meeting the Army officers at a certain airport, Mr. Thomas was informed that General Arnold wanted definite proof of the operating efficiency of his process, speed and accuracy for almost immedi-

ate strategic purposes, combined with economy of method and fidelity of object color when projected upon a white screen of any white material.

The officers were not permitted, according to orders, to take any extended time for preparation. They were to conduct the tests as soon after their arrival at Los Angeles as it would be possible to assemble the required equipment, and the tests must be conducted under the most unfavorable, as well as favorable, daylight conditions that could be devised.

After a short conference for instruction of mechanical operation and assembly of the equipment, the army men took it over and roared away into the "high-ceiling" of a brilliant sky on one of the most eventful color-test-periods of Mr. Thomas' career.

And now at last, after a long waiting period, Mr. Thomas has been permitted to assemble "unrestricted" portions of those first tests for demonstration, and to reveal his perfected process to the post-war commercial interests. For this purpose, a series of test sequences covering the Los Angeles area and photographed by Lieutenant Magnus of Wright Field, in a plane piloted by Major Goddard of the same air base, were selected.

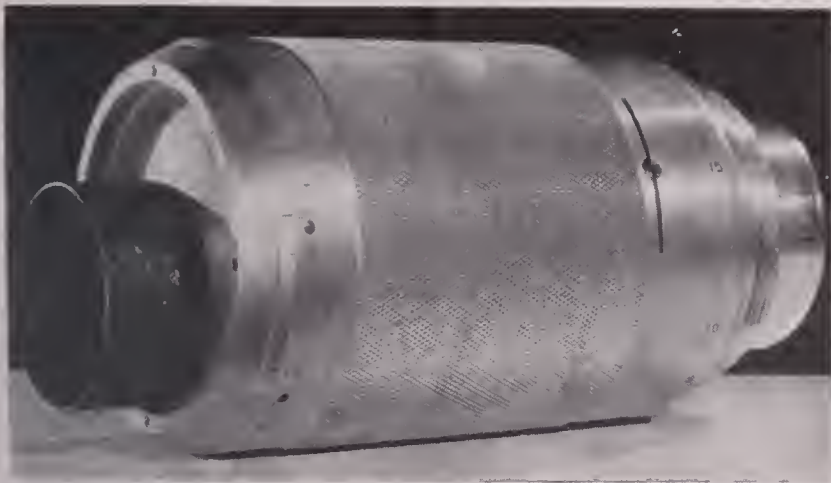
Early one cool morning, recently, according to appointment, I met with Mr. Thomas, Mr. Kistler, General Manager of the Richard Thomas Enterprises, and a correspondent of the Christian Science Monitor, to view the assembled tests in the projection room of the Thomas laboratory.

Four colors! A FOUR COLOR process! Never has my eye beheld such a faithful portrayal of the human interpretation of color by the aid of a mechanical process as was projected upon the screen that morning. The sparkling effect of brilliant sun playing upon a vast panorama as it rolled smoothly, and gently, from high altitudes under the photographing plane, and then on through storm-swirled, rain-drenched atmosphere, registering the changing colors of nature's spectrum-hues; indicating intricate detail through distances as far as twenty-five and thirty miles to the horizon by eliminating the eternal light-blue haze of earth evaporation as though it had been blown away by a cold north wind, bringing into sharp outline distant peaks and ridges in cameo-sharpness; then on into a startling climax of gorgeous sunset clouds that beggared the power of color-adjective description.

Strong reflecting warm colors did not influence or blend into close cool colors. Absolute separation was as effective as seen by the human eye; nor were the soft blendings of the pastel colors lost, in fact they were reproduced with a delicacy that the analytical eye sometimes fails to observe. We discovered that any object that can be photographed in black-and-white can be photographed by Thomascolor and enriched, and with no more annoyance than setting up a camera and going through black-and-white maneuvers. As simple as that.

Griffith Park Observatory. Warner Brothers Studio in Burbank; revealing delicate shades of greenery, gravel walks, paved streets and unpaved trails through the hills, pastel-colored rooftops, a panorama of delicate color-photography of perfectly reproduced earthly objects.

Then out over Westwood, the plane soared over the green carpeted University Campus. These particular shots pleased the army men because of the faithful reproduction of ground conditions. They were satisfied that it was



Above, Thomascolor camera lens mount, for converting standard motion picture camera into Thomascolor. Upper right, closeup of the Thomascolor projector lens mount for standard film projectors. Thomas points out this is all that is needed to convert a standard projector to Thomascolor. Right, inspecting color separations on black-and-white negatives made on the Thomascolor still camera. Bottom, at left is regular projection lens for standard projector. At right is Thomascolor projector lens mount that converts standard projector to Thomascolor.

no longer possible to disguise the earth; four-color photography revealed every detail of actual vegetation or disturbed ground or attempted falsification of foliage mingled with nature's color. The eye might be deceived but not a four color photographic process.

So enthused were the army men with the tests they had made over the Los Angeles area, that they suggested to Mr. Thomas that he accompany them on an extended flight over some area that would tax the powers of his color invention to the utmost.

With a confident smile, Mr. Thomas suggested the one locality in this country, and near at hand, that had defied so many attempts to faithfully reproduce its many color changes without long and careful preparation, and patient waiting for just the right moment when light conditions would be in perfect balance. The Grand Canyon of the Colorado! A most difficult subject to photograph in color from the air, and as yet never photographed in all the myriad chromatisms and tinctures of hues on a single flight without the aid of color dyes for the finished product.

Boulder Dam, a modern beauty made by man in an ancient setting!

As the plane winged over Boulder Dam, photographing was carried on from many angles. Changing angles brought blues and violets to the camera eye as cliff and sky colors mirrored in the lake below. And across the water raced a ripple of fleeting flame, caught from the sun, and there was no flare . . . and then the lake was like a purple pool . . . and as the wing of the bomber swung into close view the magenta shade of the insignia star was like a beacon of victory to come.

Leaving Boulder Dam, the adventurers soared over the deep wide chasm of the Grand Canyon. It was growing dark. A storm was coming up and the plane was tossed up and down a thousand feet in a matter of seconds.



Those of the party who had brought along the finest of still color cameras to make comparison pictures were defeated by the increasingly bad light; the film they exposed was wasted. But the Thomascolor cameras did not stop working. They continued to expose film, aiming at the gaudy mile-high walls, photographing a cutaway of land-stratas where once had roamed ancient creatures now extinct . . . a land where one looks back into the hoariness of antiquity, torn and slashed by the convulsions of countless storms; wrinkled and eroded by the passing of eons of time. Each canyon wall with stories entombed that could tell of the frightful havoc that had

buried struggling creatures of a prehistoric past . . .

Roaring with wide open motors the bomber struggled to rise above the storm. Thirty miles away, off over the tip of the wing, Thomascolor caught a rainbow! While this scene was being made, the gale tore at the bomber with such force that it smashed a three-quarter inch turrel on the nose of the plane! Then, a terrific surge of wind and crash of heavy glass . . . and The Lost World . . . twelve thousand feet below; then another rainbow, half-glimpsed in the dimming light of the day.

(Continued on Page 166)

Walt Disney Studio—A War Plant

By CARL NATER

NO REITERATION is necessary that since the outbreak of the war this country has been synchronized into one great machine turning out the implements of war at an unparalleled pace. The secret of this production lies, of course, in American ingenuity which has converted factories almost overnight from the manufacture of typewriters to the manufacture of machine guns, from thermostats to bomb sights, from automatic coal stokers to gun turrets and propeller hubs.

We feel that the conversion of Walt Disney's animation studio into a war plant is equally unusual and perhaps more surprising. For the greater part, the studio knew little other than the production of whimsical entertainment. Before December 7th, we were concerned chiefly with making Mickey Mouse cleverer, Donald Duck more captivating. Now it is our job to help simplify the mass production of men and implements of war. The home of Donald Duck has become not merely an essential war industry, but a bona fide "war plant" operating under Manning Table and Replacement Schedule plans as administrated by the War Manpower Commission.

Before wartime production the largest yearly output of the plant had been 37,000 feet of film. During the fiscal year, 1942 to 1943, Disney produced approximately 204,000 feet of film, which is 5½ times the largest peacetime output. Of this amount 95 per cent came under governmental contracts. The balance, or approximately 10,000 feet, constituted the theatrical program produced for normal theater release. Included in the footage produced under governmental contracts were training films for the U. S. Navy, the Army Signal Corps, the Army Air Forces, the Air Transport Command, and other service branches. Films were also made for the Coordinator of Inter-American Affairs, the Treasury Department, and other agencies of the government.

It might be interesting to note that because much of this work involved live action or real photography, which was so closely related to the animation sections, it became advisable for Disney to do the entire job. At one time four companies were in action—one on our own live-action stage, two in the Middle West, and one in South America.

As the majority of these films were of a confidential nature, any detailed discussion of them is curtailed by certain security restrictions. However, this means much can be said: the training films dealt very directly and very specifically with the important problem of

overcoming the enemy once you meet him. How to shoot Jap or German fighters out of the sky; how to attack their bombers and their shipping, where and how to launch an aerial torpedo in order that it may sink an enemy ship; how to service, maintain, and use an automatic pilot so that precision bombing can be accomplished—these are all typical examples of the subject matter incorporated in these training films.

In addition to this type of production which dealt with the direct methods of waging war, a series of pictures, less obvious in motive, was made for the Office of the Coordinator of Inter-American Affairs. The purpose of these films was to promote better understanding and relationship between North and South American allies.

As part of this program, several films dealing with agriculture and sanitation were made. These were designed to stress the importance of certain crops, to explain the proper method of protecting pure water supplies, to cite the merits of vaccination, and to assist in combatting the Anopheles mosquito in the control of malaria fever.

In this malaria film, the seven dwarfs, Happy, Sleepy, Doc, and the others—even Dopey—portrayed in their own energetic manner the correct method of clearing a swamp to stop mosquito breeding. Other Disney characters, too, have found themselves useful on the home front. Donald Duck has periodically forgotten his own troubles to help Mr. Morgenthau clear up some of the misery we all experience around income tax time and to convince the American people that income taxes should be promptly paid. Minnie Mouse, with feminine understanding, endeavored to convince the housewife that the salvage of kitchen fats for ammunition glycerine uses was an important war job that could be performed in the kitchen.

However, adjusting Mickey Mouse and Donald Duck to their new roles involved almost every department of the studio, for the producing of educational and training films was, in effect, a completely new-type product and, like all war plants producing new products, there were many complications involved in the change-over, complications that perhaps paralleled the difficulties encountered when typewriters became machine guns and coal stokers, propeller hubs.

In many ways the problems were not serious, for no heavy machinery was involved, no dies or presses that needed redesigning, and there was no necessity for new installations. Regardless of the subject matter, the product was still shot on cameras and still produced on film.

Nevertheless, this change-over did bring with it many operational changes. Most drastic of these were time and cost. Before this type of work came to Disney's, it was not unusual for the studio to spend from 1 to 3 years producing a 6000-foot feature. To meet military schedules, it was necessary to produce a picture of equal length in 2 to 3 months. From feature entertainment pictures costing from \$200 to \$250 per foot of completed film, it was necessary to produce a product costing as low, in some cases, as \$4.00 per completed foot.

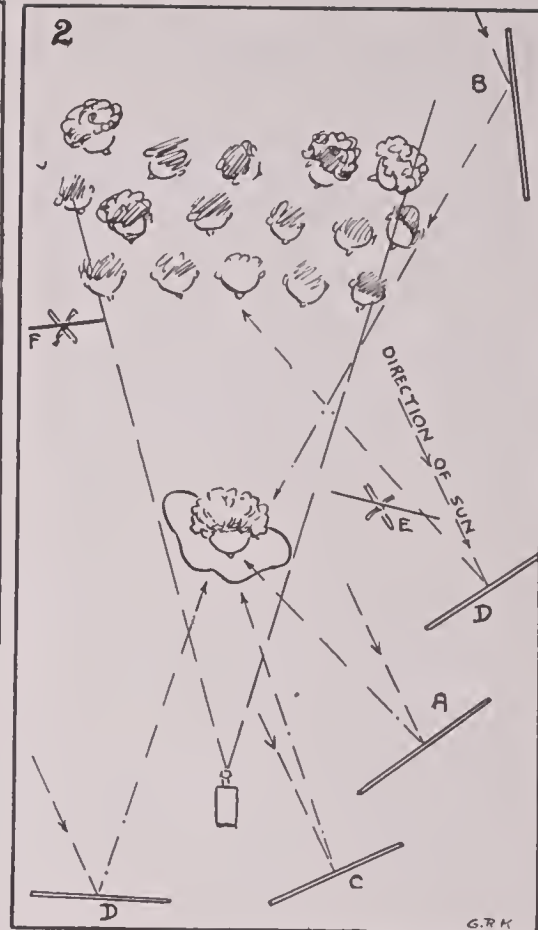
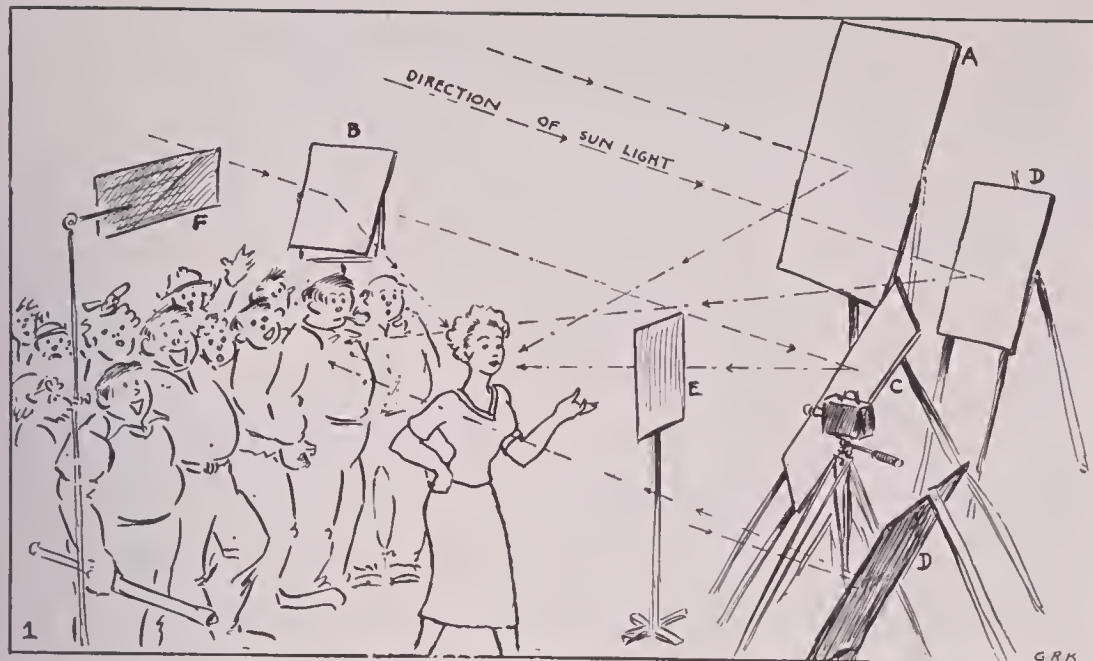
This forced economy wrought the biggest problem encountered in the change-over, the problem of changing "mental equipment." The studio personnel had for many years been trained and admonished to adhere to a stringent quality standard. Upon this quality, Walt Disney feels his house of fantasy has been built. Since the birth of Mickey Mouse, it has been studio policy that quality must be the foremost consideration, even though this meant lengthening schedules and thus increasing costs. However, since December 7th, Disney studios has undergone a revaluation of factors. Although quality is as much a part of training films as it is of theatrical films, wartime pressure has nevertheless forced it to ride in a "show" position behind price and schedule.

Another phase in this change-over of "mental equipment" was the problem of indoctrinating entertainment-experienced personnel into the ramifications of a new product requiring that emphasis be placed on teaching value rather than on entertainment value, although this in no way implies that training films must lack audience interest.

To swing the entire personnel to think in terms of teaching value rather than entertainment value might have been a simpler adjustment had not the item of footage cost been so important. When entertainment was the primary factor of the film, the artists were expected to take whatever time they needed to maintain Disney quality. To suddenly convince them that it was still necessary to maintain a certain standard of quality, but also to produce the picture in less than half the time, required not only the sincere efforts of everyone involved, but also an intelligent appreciation of the true balance between cost, time, and quality. It is apparent that the value of pictures dealing with the strategy of warfare lies in quick production. Training films would have little value if it took an impractical length of time to get them to their destination, for in this war any particular strategy is almost outmoded before it becomes practice. Therefore, it was the responsibility of the personnel working on these films to know when to temper quality for the sake of cost or schedule. Also, the ever-changing tactics and

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NOTE—THIS ARTICLE IS REPRINTED FROM THE MARCH S.M.P.E. JOURNAL.



Lighting Sunday Movies

By GLENN R. KERSHNER, A. S. C.

"BRING your cameras along and have plenty of film, we're depending on you to make a number of groups and a lot of individual pictures, especially big close-ups so we can use them in the magazine . . . so long . . . we'll see you Sunday at Brooks Park," and John hung up the receiver.

I loaded all my magazines, selected a few filters and filled the back seat with reflectors; a few flats to block light, some sticks and clamps for the reflectors and a couple of two foot square mirrors.

Sunday, the weather was all a photographer could wish for while huge masses of cumulus clouds floated over the mountains to enhance the day's work with beautiful effects with graduated filters.

To speed up the day's work, we divided the people in two groups. Those with very light colored clothes, and the other with the darker clothes. We worked during the morning and afternoon to avoid the middle of the day when the sun was overhead to cast long ugly shadows under the eyebrows, noses and chins. In arranging the groups with clothes not white enough to reflect the bright sun light, we placed them so they would have the benefit of a front three-quarter sun light, with the reflectors so placed out of camera angle that they would give a nice back light on the shadowy side.

For those with the lighter clothes and blond hair, we waited until the sun was half down and reversed the angle with the sun coming from behind them and enough to one side so that the sunlight fell over their right shoulders onto the cheek, with just a little splashing over their left shoulders, thus giving a nice shadow on their left sides. These shadows

we lighted by soft reflectors (Gold Foil), raised some eight feet above the ground and to the right of the camera so that they reflected a three-quarter light onto the faces and dresses.

In the larger groups, four reflectors placed side by side was sufficient. We then raised hard reflectors (Silver Foil) on sticks behind the people so as to give a nice back light on the shadowy sides, giving us nicely balanced lighting.

On moving up for the head close-up, we moved the subject to camera left to prevent sunlight from falling on the cheeks which would spoil the pictorial lighting. But when they turn their head either way, the profile will be nicely outlined by the sunlight or by the back light from hard reflector "B" (Silver Foil).

To light the face, one soft reflector "A" (Gold Foil) was raised high enough to give a three-quarter light, or should we say, four point portrait light . . . forehead, cheek and chin with a little on the other cheek, allowing the off side of the nose to be in shadow; also a V shadow under the nose that filled no more than the space between the upper lip and smile line. See illustration 3.

Quite naturally, these shadows with those under the eyebrows and chin will be too dark, so we raise two small reflectors "C" and "D," which had been painted with flat white, to the height of the camera and right beside it to soften these shadows, and bring it only close enough to the subject not to spoil the modeling or the picture will become what we call, FLAT, in other words, minus shadows and detail. For the back light, we raised a Hard reflector "B" and brought it as close to the camera angle as possible.

Reflector "D" for lighting people in background, you will have to be your own judge as to the kind of reflector to use, but never light the background as brilliant as the main subject, direct light falling on the lense, E and F are flags to prevent sunlight from hitting camera lens.

In some of the close-ups, a diffusing disk was attached to the lense to soften the angular features and wrinkles. Should you have no disks, a piece of fine netting can be used, one of single thread, but be sure to keep any sunlight from falling onto it or it will act the same as though you were photographing through a well frosted window.

While the sun was overhead and not wishing to lose the time, we moved un-

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THROUGH the EDITOR'S FINDER

TWO announcements, one by Technicolor, the other by Dupont, indicate the passing of black-and-white motion pictures at the conclusion of the present world war.

The announcements also indicate the passing of the complicated and expensive methods of producing commercial and entertainment films, and the advent of monopack which will eliminate the necessity of special cameras.

Dr. Herbert T. Kalmus, president of Technicolor, in his recent annual report to the stockholders, revealed that his company is planning to scrap its present three-strip process and turn to monopack. He stated that a new plant will be built to house the process. The new plant will be constructed as rapidly as possible, with present laboratory units kept at capacity until the new one is running, after which they can be slowed down for conversion.

The monopack stock for Technicolor has been created by the Eastman Company, and it carries all color emulsions on one base. Dr. Kalmus revealed that Metro-Goldwyn-Mayer's beautiful picture, "Lassie Come Home," was "an experiment in monopack," and says "the great beauty of the picture and its favorable reception at the boxoffice speak for the success of the experiment."

So much for Technicolor's plans.

DuPont, apparently has color plans for post-war, too, for that company has just announced it has engaged J. Arthur Ball as a special consultant. Ball was one of the pioneers of Technicolor, and was the cameraman on the first Technicolor motion picture made in 1917. He eventually became vice-president and technical director of the company until he resigned some five years ago. So, quite naturally, it is expected that Ball will concentrate on the DuPont color plans. It was Ball who was in charge of research for the present three-color process used by Technicolor.

DuPont long has had a monopack three-color process far advanced in its laboratory. With the engagement of color expert Ball, it seems apparent that the company is preparing to bring it on the market when the war is over. With the public crying for more color films, and both Technicolor and DuPont turning to monopack, it is evident that color will be the general rule in future films.

SOME idea of the importance of the work of cameramen in the present war may be gained from the statement made by Major Raife G. Tarkington at the presentation of the "E" Penant to Ansco recently.

He declared that striking proof of the

importance of photographic intelligence was best evidenced near the end of the Tunisian campaign when, he said, "all action ceased for two full days just because weather prevented the 'recon' boys from getting the photographic information that the Ground Commander considered vital. Think of that—the war stopped because of no pictures!"

"Aerial photographs tell us what the enemy is doing, where his troops, equipment and supplies are located and what lines of communication and supply he is using. Then we go and bomb the living hell out of them. Later, of course, pictures will give us irrefutable evidence of the damage done by the bombing raids or artillery fire. Then we either cross that target off the list as 'Mission accomplished' or we go back and 'paste' it again, until it is no more."

When a war is halted waiting for pictures—well pictures must be really important!

BACK in 1923 the late George Eastman gave birth to an idea destined to become a tremendous factor in the field of education. It was the idea of classroom films. He pioneered teaching films at a time when hard-headed educators turned thumbs down on anything pertaining to motion pictures.

Eastman and his Eastman Kodak Company went ahead and developed the teaching film idea and gradually but surely made it a part of our educational programs in the schools. That Eastman was right has been evidenced during the present war when teaching films have been used to instruct troops and industry.

Now the Eastman Kodak Company has donated its 16mm. library of some 300 "silent" classroom films to the University of Chicago for distribution through the university's affiliate, Encyclopaedia Britannica Films. The Eastman Kodak Company is to be congratulated, for those films will now become still more important in the field of visual education.

SPEAKING of the post-war developments brings up the matter of television. Whether the motion picture industry wants television or not, it is going to be a tremendous factor in the entertainment field as soon as the war is over.

To this observer, it would seem wise for the film industry to step right into the television parade with both feet. Otherwise, the radio industry might swallow up the television industry and leave the film companies on the outside wailing because television is keeping millions of persons away from the motion picture theatres.

Technicians within the film industry would do well to get on the television bandwagon and learn the new technique.



When Day Is Done

Photo by
Wallace Thompson

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EASTMAN FILMS

"WELL, I'LL BE HANGED"

A Simple Home Movie Scenario In One Reel

By JAMES R. OSWALD

LOOKING for a way to attain good continuity in those indoor movies? Then try filming this little scenario, which will provide plenty of laughs for family and friends. Camera angles play an important part in the success of this movie, as in any movie, and for that reason helpful suggestions are given at the end of each scene descriptive of how to film it more effectively. A wide angle lens will be of value, though not absolutely necessary. All ready now? Lights! Camera! Action! . . .

SCENE 1

Hand in the act of pressing doorbell button, followed by slight pause, second ring.

(Closeup showing hand and bell button only.)

SCENE 2

"Heroine" of the play, busy in the kitchen baking, removes apron, and proceeds to walk in the direction of the camera, to answer door.

(Distant shot, best taken through doorway of an adjoining room, thus affording a good, head-on introductory view of the feminine lead, as she approaches this entrance.)

SCENE 3

Outer door is opened and large, flat package is accepted from unseen person outside.

(Semi-closeup, filmed from an indoor viewpoint, emphasizing the handing of the package through the partially opened door.)

SCENE 4

With the usual gleam in the eye of a person receiving a new, carefully wrapped parcel, the package is carried into the dining room, where it is placed on the table for unwrapping.

(Distant shot, taken from end of dining room.)

SCENE 5

Leading male character, who plays the part of the husband, makes his first appearance as he enters the dining room to investigate the cause of the excitement.

(Distant shot, from dining room, but different angle than preceding scene. If person selected for this part smokes, he should enter holding, but not actually smoking, his lighted pipe, cigarette or cigar.)

SCENE 6

Husband anxiously watches the untying of the package.

(Semi-closeup, including both persons, but with emphasis on hands doing the unwrapping.)

SCENE 7

Contents is revealed to the audience . . . a beautiful, framed picture.

(Closeup of wife's hands holding picture to face camera.)

SCENE 8

The two walk into the parlor in search of a suitable place for hanging the picture. Husband's face suddenly lights up with a smile, as he points toward wall, indicating he has found just the ideal spot.

(Distant scene, taken from far end of parlor.)

SCENE 9

Wife has different ideas, however, and shakes her head negatively, as she scans the wall space for a more suitable location for the picture. All of a sudden, then, beaming with delight, she steps over and places her hand on wall, at place of her selection.

(Distant shot, from end of parlor, panned to follow walking.)

SCENE 10

Husband, not sharing wife's views in the least, picks argument with her, which, of course, ends in her favor. The scene closes as the husband faces camera, shrugs his shoulders, expresses a "you win" attitude, and walks out of view, to get tools for hanging picture.

(Distant shot taken from living room, but at a range to include only the full figures of the 2 characters.)

SCENE 11

As wife is eyeing up picture, which she is holding temporarily in place on wall, husband enters the room with hammer and nails, and carrying a small footstool.

(Distant scene, from living room, but different angle than preceding shots.)

SCENE 12

Requesting that he hold the picture so she may view it from a point farther back, the wife hands it over to him, and steps back a few paces.

(Semi-closeup, including both persons.)

SCENE 13

With the husband now holding the picture, he is advised it is a trifle too high . . . lower it a bit.

(Distant shot, taken from across the room.)

SCENE 14

Observing with a critical eye, the wife signifies it is too low, now . . . raise it a little.

(Distant scene, same angle as above. Fade out this scene and into the next, to indicate lapse of time.)

SCENE 15

"Now . . . just slightly to the right," she directs in final criticism.

(Semi-closeup of wife motioning with her hand.)

SCENE 16

Picture is moved, as husband looks to spouse for approval.

(Semi-closeup.)

SCENE 17

"There!" Wife shakes her head affirmatively as picture is at last located to her complete satisfaction.

(Semi-closeup, including only this character.)

SCENE 18

Husband marks the spot, sets picture down, and proceeds to pound nail in wall for hanging, during which act he strikes self on thumb several times with the hammer.

(Closeup of hammering operation only. Actually, the wall itself need not be marred at all, the nailing effect being obtained either by clever "faking" or by substituting a "dummy" wall for the occasion.)

SCENE 19

Tools are laid aside as picture is again taken hold of and hung on wall.

(Semi-closeup.)

SCENE 20

Wife, who has been acting in a supervisory capacity, watches as picture is made perfectly straight by husband.

(Distant view, taken from a far point to include the two characters, and a large portion of the room itself.)

SCENE 21

Picture being tilted back and forth very delicately.

(Closeup, showing hands doing the shifting.)

SCENE 22

Finished at last, the picture now hanging perfectly, husband and wife step back to view the completed job.

(Distant shot from across the room, of the two characters admiring the picture.)

SCENE 23

As he walks directly toward the camera, expressing the deep satisfaction of a job well done, the beautiful picture breaks loose from its mounting, falls crashing to the floor, and shatters to bits!

(Distant view, aimed directly at the picture, and including as much of the room itself as possible. On the effectiveness of this scene hinges the success of the entire film. Extreme care should be taken, therefore, to execute it as cleverly as possible. The picture, as it slips from the wall, should be in full view of the camera. An assistant, off to the side, causes it to fall by means of a black thread, invisible to the camera, which he jerks at the opportune time. The picture, of course, is an inexpensive one, which nevertheless looks impressive in a movie, and may even be procured from the local dime store. Although the effect is more convincing, when the scene actually shows the picture hitting the floor, should it not be desirable to ruin a good picture, it is sufficient to show it leaving the wall, after which it lands in a soft pillow, just out of camera range, unharmed. As the husband's disgusted look indicates he has heard the crash, the scene fades out, followed by . . . "The End.")



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Cameramen at War

(Continued from Page 151)

envy of other units that didn't seem to be reported by prisoners as so hard hitting. This tough unit had worked out an effective system of flying tactics that meant deadly destruction to any target they went out to break up. Fernstrom and his crew worked out a name for the Group that has stuck to this day. The "Earthquakers." They were a disaster to any enemy they decided to put out of business. Rommel, and his gang, found it out while they were running for Cape Bon, and before they could get off the Cape.

A pal of Fernstrom's was one of the cool, level headed, soft spoken pilots, young Lt. McAdee. He was fearless, and blessed with quick-thinking, flashing mind of perfect calculating power. The kind of a pilot crews never hesitate to fly with, McAdee flew a B-24 on the Ploesti raid. He spotted a full chest of decorations that proved his prowess; the type of officer-pilot that made it possible for photographers and cameramen to test their skill.

In the words of Fernstrom and McAdee:

"We missed *no* combat flights over enemy territory. We photographed them all. We did a lot of low flying, below five hundred feet, until we picked up a fighter escort, then climbed high and cold and headed for the target.

"When on the approach, we'd dive to a bombing altitude of eighty-five hundred feet and fly level, bomb, dodge ack ack fire and then high-tail-it for home.

"But there was a bigger raid shuffled out of the cards from the High Command. We hadn't been told, but from the preparations that were going on we guessed that something just a little more than the usual routine was coming off soon. Inspections became stiffer and went deeper into details. More motors were being tuned up. More planes, fighters and bombers, light, medium, and heavy bombers with ten men to a crew were coming in and setting down; some new planes, fresh and sparkling, and planes that had seen service with scars and credit marks on 'em.

"Something was afoot. Then one night a special session was called to assemble in the Briefing Room. We knew now that it would only be minutes until the pilots and crew would get rid of the mystery-load they had been carrying around and know the reason for the special low-level flying maneuvers they had been going through for the past weeks.

"Thanks to our work in chasing Rommel's scattered army across the desert, we'd got wised-up to some new tricks that jolted his cockpit warriors out of their seats. It'd be fun to try some new tricks now.

"After the details of the "Target for the Day" had been thoroughly analyzed,



Some of the American bombers on the way to bomb the Ploesti oil fields.

the men filed out of the Briefing Room with their mental attitude changed, settled, serious. The "mystery" had dissolved. There was no speculation as to what was afoot, *they knew*.

"The arrival of General Doolittle had lifted morale to a high pitch of eagerness to get on with the job. The men knew that there wasn't a detail in the life of a flyer that he didn't know from personal experience. His way, and his visits, and manner of talking to the men in a language they understood, always lifted the enthusiasm of the men who did the flying jobs. They'd follow him anywhere or go on any job he layed out for them.

"The moment of departure on the eventful mission analyzed in the Briefing Room was several hours off. It was an active several hours too. Precise inspection, down to the smallest detail took up most of the time together with preparations so vital to a successful flight over enemy territory. Those were precious hours.

"Occasionally, a guy here and there, in a poor attempt to cover his nervousness, would try to crack a joke that'd turn out ghastly and be greeted with a stiff rebuff from those working with him. A nervous tension pervaded the atmosphere. Joking at this time didn't fit in. What was needed was action—the hum of motors—alertness. How successful would the raid be—and that thought burns in the mind of every man in the crew before a raid starts out. How many, and who, would be left behind that would never get back home? Each man would speculate on himself until he'd get into action and then forget himself for the work in hand. But all the men picked for this raid were veterans. They'd been through tight places before. Maybe this raid would be tighter.

It wasn't a safe gamble for any man's money.

"The men weren't cocky, they were dead serious. They'd light a cigarette, and it was only good for a couple of puffs and flicked away with a quick jerk; then it'd be only a couple of minutes and they'd light another only to be flicked away again. Men spoke sharply. No jesting. Words were emphatic, plainly spoken. Snapped out. Faces hard set. The restless routine was over. A dangerous business was ahead, and preparation had to be considered. No time for emotional outbursts.

"As the time for jumping off approached activity ripped fast but quietly. It was early morning and cold. A good brisk breeze come out of the north, and along with the darkness of the morning, was perfect for the get-a-way.

"The pilots, co-pilots and navigators climbed through their hatches and pulled the ladders up into the ship. The tail gunners and waist gunners, the engineers, radio men and photographers, crowded through their hatches and pulled them shut. The props turn over and the planes taxi down the runway and rise up into the dark.

"It was a grand morning. Just before sunup and the stars shone with a steady, cold brilliance, others seemed to flash, from the almost background of sky just beginning to faintly fringe with a pale glow along the eastern horizon of the Mediterranean.

"It was quiet up there, except for the steady droning-purr of the motors which helped to make more sensitive the bearing down pressure of the business ahead. No one tried to talk. There was too much to think about. Each man had left his quarters in meticulous order so that his few personal effects could be picked up and sent to his "nearest of kin" if he didn't come back. Maybe this would be the bust-up, but no one talked about it—except maybe with a very close pal. The quietness that pressed against us now was the quiet that always precedes a storm, and this was to be the storm of blasting the target completely—the storm of a killing mission.

"It was soothing though to look around. As far as the eye could see there was only the vast expanse of the quiet Mediterranean. A faint sparkling glow rested on the water way off in the east like a cheering good omen. But up into the north, the direction we were headed, was a big black vault of eerie blackness full of things ready to clutch us—to break off our wings and let us crash.

"There was a chain of high, snow-covered, sharp-peaked mountains ahead there in that blackness that we'd have to jump over. Fifteen thousand feet we'd have to lift the heavy plane with its blasting load in order to clear those peaks and before we could commence to level down toward our objective, the Ploesti Oilfields, ahead of us to the northeast of those mountains.

(Continued on Page 174)

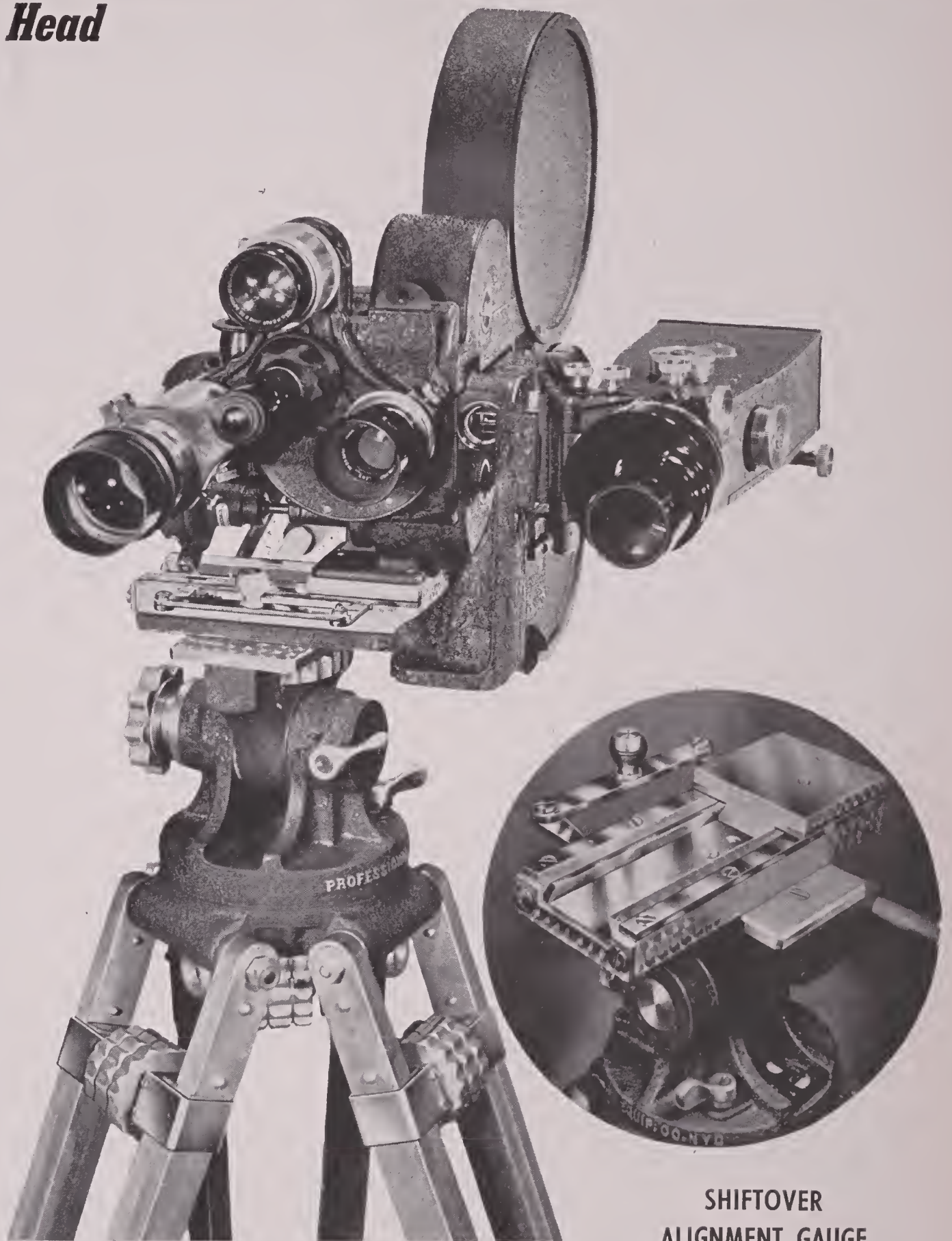
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*Patent No. 2318910



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★ We show above a closeup of the Shiftover Alignment Gauge and also a view of the B & H Eyemo camera mounted on the "Professional Junior" Tripod and Shiftover. These have been especially adapted for aerial use by the Office of Strategic Services, Field Photographic Branch, Wash., D. C.

★ This Shiftover device is the finest, lightest and most efficient available for the Eyemo Spider Turret prismatic focusing type camera.

★ The male of the Shiftover attaches to the camera base permanently and permits using the regular camera holding handle if desired. The male dovetail mates with the female dovetail base and permits the camera to slide from focusing to photographing positions for parallax adjustment. The camera can be locked in desired position by a positive locking-device.

★ The Shiftover has a "stop-bracket" which prevents the camera from sliding off the dovetail base—and is provided with dowel pins which position it to top-plates of tripods having $\frac{3}{8}$ or $\frac{1}{4}$ -20 camera fastening screw.

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY

A Newcomer Looks at Hollywood

(Continued from Page 153)

and my agent. Well, throughout the entire "performance" I said exactly four words to the boss. I said, "How do you do?" (Silly phrase, isn't it?) He never got around to telling me how he did . . . he just squinted his eyes at me and said, "Well, it's all right . . . but I wish it wuz more . . . uh . . . glamorous," and he made a figure 8 with his hands. So, while I sit like a bump on a log (or like the bump I'd like to have put on his head), wishing I was more like the figure 8, this talent scout goes into action. He beats fiercely on the desk, and I watch, fascinated, while a paper-weight bounces up and down dangerously near the edge. "Glamorous!" he roared. "She may not be sexy, boss, if that's what you mean (as if he didn't know) but then, neither is Vivian Leigh, or Teresa Wright, or Bette Davis, or Ingrid Bergman, or Joan Fontaine . . . and they're doing all right. She may not be a glamour girl, but she sure is an actress. Boss, she's great, she's adjective, adjective, adjective . . ." and while he sang my praises I eyed him with a new respect. You know, there's something about Hollywood casting I never could understand. Why do they want all of us girls to look alike? Why must we all look like glamorous paper dolls? Why must we all be sexy? Doesn't acting ability, or brains, mean anything? . . . I mean for a beginner. (David Selznick is an exception. Smart man.) Now, that casting director, for instance, did he look at my face to see what he might find there? Did he look at my eyes to see if I could talk with them? Did he give me a chance to sit and talk with him so that he could hear the quality of my voice, and get an angle on my personality? No, he just looked at me, and because I didn't clutter up the place with sex he simply says, "Well, it's all right, but I wish it were more glamorous."

Well, in my opinion, the Hollywood girls fall into two categories . . . the glamour girl, and the actress. I'll take my stand with the actresses. Because, boys, I didn't come out here to look glamorous (which I can do if I like). Why, that lil' ol' Dallas, Texas, where I cum from is just full of glamorous gals. I coulda stayed home and married myself a lil' ol' greasy oil driller if I just wanted to look glamorous. But I came out here to act . . . and I'm not going home till I do, so one of you producers might as well make up your mind to give me a chance, and the one who does is going to find a good dramatic actress on his hands, and I do mean me. Yeah, I know, you are gonna rock back in your swivel chair and puff your cigar and say, "Listen, girlie, you shouldn't go around calling yourself a dramatic actress. That is a title that first has to be earned." Well, like I said before, all I want is a chance, and I'm ready, willing and able to back up the above statement . . . and

I'm taking all comers. Is there a gambler in the house?

Anyway, the scout finally convinced the "boss" I was worthy of a "photograph" test. I protested loud and long to my agent, but he insisted it was a break. So my fateful day arrived. When the make-up department finished with me . . . Well! the boss should have seen me then. I must have looked more like a figure 8 that day, or else all those fellows were whistling at a stray horse . . . and I didn't see any horse. But, no, he got side-tracked somewhere that day, or maybe went to Arrowhead Springs for lunch. Anyway, he was nowhere around to see me in my glory.

I wasn't lucky enough to be tested immediately after leaving the make-up department. By that time it was noon. So, my agent took me to the studio commissary for lunch. Food! At a time like that! Here follows an open letter to all agents: Dear Agent: When you have a client who is about to be tested, please do not insist that he, she, or it have lunch beforehand; unless, of course, the test is to portray him, her, or it in pain somewhere near the middle of the torso, because you can bet your bottom cube of butter he, she or it is going to have one (a pain). Signed, One-who-ought-to-know.

Next, I learn that the test is not to be made at the studio, but at some address a sleeper jump away. Also, I learn that the talent scout has decided to go out with me to see that I "get off on the right foot." (I didn't know there was anything unusual about it at the time.) The truth of the matter was the man thought he really had a "find" and was trying to make things easier for me, to help me overcome my nervousness. He sez, "See if you can find something to do to amuse yourself until 2:30, because I have appointments until then". So, from 1 o'clock until 2:30, I "amused" myself by burying my face in a fascinating article entitled "Do You Have to Get Up Nights?"

Now, of course, all this time I was highly "amused" because by this time my glory was wilting a bit. My lipstick was all eaten off, and my hair falling down. Yousee, in order to make my hair appear longer, the nice woman in the make-up department had pinned additional "false" hair underneath my own. Well, by now the pins were falling out, and strands of the false hair were straggling down my back. Oh, I'd easily have put Alice Goon or Hazel Hag to shame.

At 2:30 the scout bounces out of his office, rubs his hands together and says exuberantly, "Well, let's get going! Let's get going! Are you ready?" I sat very still. "Early, old girl," I sez to me, "this is one time your right hand should know what your left hand is doing," and I caught Lefty just as it was about to make like Joe Louis, "Don't hit the man. Control yourself. Breathe deep . . . count up to 2500, and everything will be okay." So I beamed brightly and said, "Ready? Oh, yes, yes, of course. I was just finish-

ing this intriguing story, 'Did They Laugh When You Sat Down to Play or The Missing Chair' I have just three lines to go." "By all means!" he said. So I finished my story to its bitter end (the character in my story finished there, too) and we were on our joyful way.

The cameraman was waiting, and it didn't take me long to discover that it was not customary for a scout to accompany his "find" to be tested. So, right away, quick-like, he got the idea there was something underboard going on between me and my friend the scout. He was told briefly that I was found emoting at Pasadena Playhouse, etc., . . . but that didn't cut any ice. He still gave me sly sidelong glances that said, "There is more going on here besides a test. Don't tell me!" So the scout told him what kind of shots he wanted and, as he departed, patted my hand and said, "Now relax, honey. Don't be nervous. Everything is gonna be alright", and he left. Well, that's all Ezry (the cameraman) needed. That settled it . . . removed all doubts. He went about his business with camera and lights, but frequently shot me one of those "I'm-onto-your-secret" looks, with raised eyebrows and one corner of his lip turned up in a little smile. He set up his camera and lighted me. Then he threw down a quarter, told me to stand on it, and we were off. The camera started rolling, and he told me to turn from left to right. So far, so good. Then he said, "Now look toward me and smile." So I looked toward him and began a slow, sweet smile . . . when suddenly, "NO! NO!" he shrieked, and my smile froze. "Remember your tooth," he sez. (At that time I was having a slightly crooked front tooth corrected). The camera must have caught the face of a girl about to sweetly smile, when suddenly she is attacked from the rear by someone with a spike nail who hit his target. Ezry says, "It's alright to smile, honey, but just don't show your teeth." Oh, fine, Ezry, fine! Smile, but just don't show your teeth! Did any of you ever try to smile but just don't show your teeth? Try it sometime. I must have looked for all the world like a gallant lass bravely bearing up under the ordeal of having her toenails removed.

Suddenly Ezry whirled on me and sez, "Now start talking. Let's see some acting." My mouth fell open. I was completely speechless. His abruptness startled me. I sez to me, "This man talks like he just fell out of a well," and I sez to him, "What emotion do you want?"

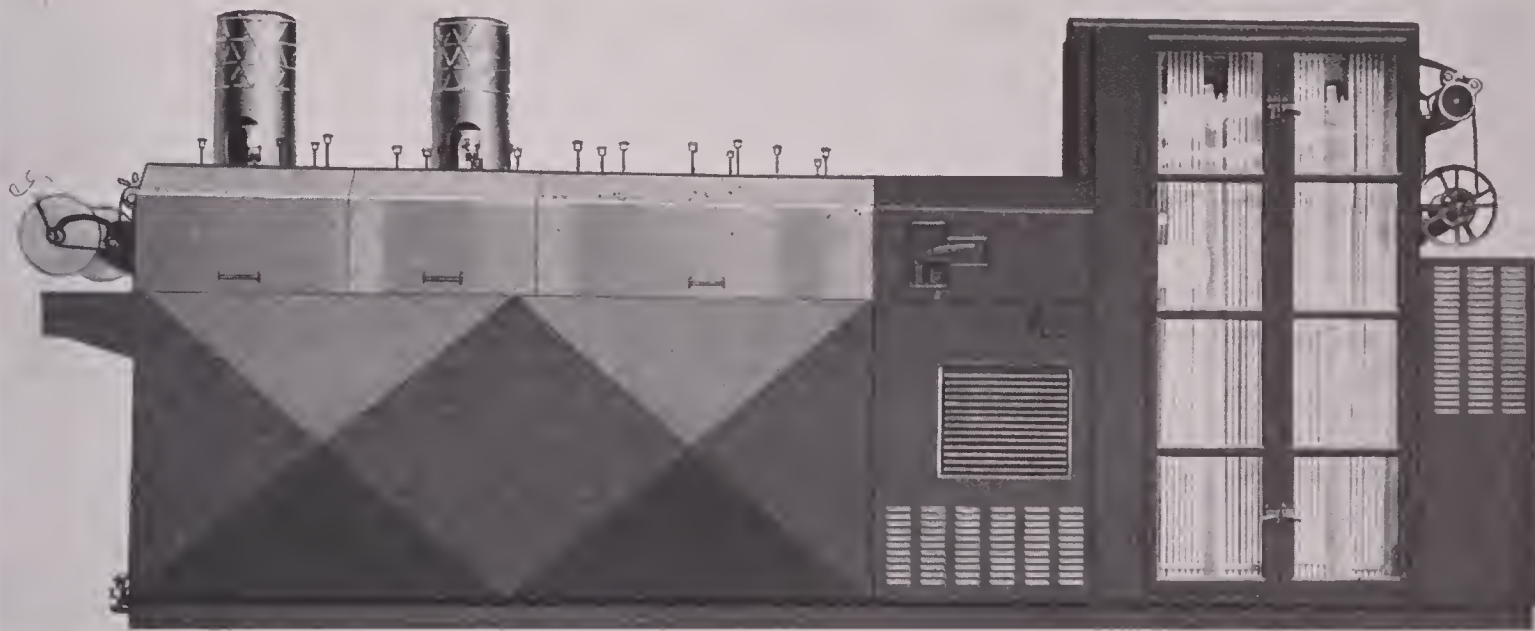
"Well", he stroked his chin in deep meditation, "Let's see; Oh, yes, why not something sexy? Yeah, that's it . . . sex."

I glared at him. I clenched my fists. Sex, again. Now, what has Sex got that other things ain't got, I thought . . . whatever it is, it's ruining my life! . . . Alack, and alas! . . . woe is me! . . . ah, cruel world! Here I stand, an unknown, in front of a camera for the first time, with said camera rolling furiously while

(Continued on Page 172)

The Houston Corporation

11801 W. Olympic Blvd. Los Angeles, 25, California



The Houston Duplex Type 35 MM and 16 MM Negative and Positive Developing Machine

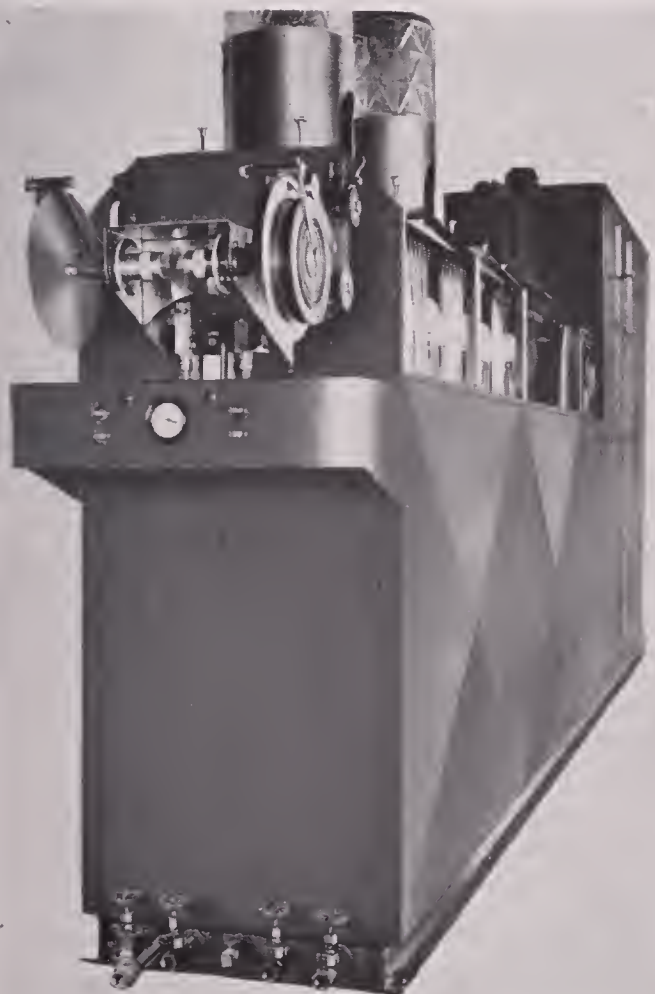


Description: Designed for dark room operation. Two developing tanks are provided for this machine whereby 35 mm and 16 mm negative can be developed in the one tank, using the same solution at the same time. When 35 mm and 16 mm positives are to be developed, the negative tank is simply by-passed, without disturbing the solution and vice-versa. The machine is so arranged that, for example, 35mm negative can be developed on one side while 16mm positive is being developed on the other side. The developing solutions are forced through orifices adjacent to each strand of film on the emulsion side to provide turbulation at these points in order to prevent directional effect on the developed image.

Automatic heating control is provided for drying by electrical space heaters. It is a top frictional drive type with floating bottom elevators in order to maintain uniform tension throughout. The unit is entirely self-contained, requiring no additional equipment. All that is necessary is to supply the proper electrical power, filtered water and drains.

This machine can be supplied for processing 35 mm negative and positive on both sides or 16 mm negative and positive on both sides.

The Houston Corporation specializes in the design and manufacture of equipment to meet individual requirements. 16 mm - 35 mm Positive, Negative, Reversal; Film or Paper.



Loading End And Valves for Water Supply and Drain

FROM CAMERA TO SCREEN — HOUSTON

Motion Picture Studio and Laboratory Equipment — Developing Machines — Printers — Camera Cranes and Dollies
Miniatures — Mechanical Sets — Engineering and Design Work — General Machine and Jobbing Work

Thomascolor

(Continued from Page 155)

With the job finished from the air at this portion of the Grand Canyon, the adventurers landed at a specified airfield and returned the following day to try moving and stationary shots from the ground. The storm had passed on and the Grand Canyon was bathed in the crystal-clear light of a warm sun, gigantic, peaceful, restful, but awful in the clean-washed clear atmosphere.

Famous artists have wept in bitter disappointment over their failures to capture the ever changing blends of the light and shadow of the Grand Canyon. This catastrophic-carving of nature is a supreme challenge to color photography and many who have accepted the challenge have failed. But there it was, right before us, in duplicate upon the screen, faithfully reproduced by Thomascolor.

The next day a visit was paid the Zunis Indians. They were performing their ancient ceremony of prayer for rain. The storm that had tossed the bombing plane around had passed by the parching crops of the Zunis.

The ceremony of praying for rain is very sacred with the Zunis, as of course are all their ceremonies. They are a peace-loving people, simple, honest, and very wise in the legends of the romance of their once powerful tribe, picturesque too, their brilliant dress and finely colored-sculptured faces . . . their abodes, sheep and ponies tended by colorful herders; ancient pastoral scenes of an old land, so interesting in its colorful Thomascolor reproductions.

Even when those brilliantly colored headdresses passed within inches of the camera lens there was no loss of the colorful detail; no flashing, no bleeding, no color confusion, no reflecting influence of the brilliant colors into the fluffy, clean white of the forefront soft feathers of the headdress; not a glare of white, but a soft, down white, full of clear detail. That proud headdress spoke of a legend of a proud race:

*My warriors ride no more in rainbow
canyons;
Only the ghosts of my people whisper in
the purple shadows.
We read our fate in each day's golden
end,
For woven against the sky are the
memories of a thousand years.*

Arriving back in Los Angeles in the late afternoon of the next day, the adventurers clicked right to the minute with one of the most beautiful heaven displays that had kaleidoscoped the sunset sky for many years. The unfolding banners of color was reported in the Los Angeles papers, "Nature's artistry glows in the glory of a sunset over Los Angeles."

Most unusual cloud formations of varying differences in density and altitude elevation, moved by rapidly changing air stratas, caused the phenomenon. It was said to have been the most unusual sunset over the Los Angeles area since the eruption of Krakatoa in 1883, which caused red sunsets for nearly three years. Newspapers all over Southern California gave space to this phenomenon.

For us who had not been fortunate in witnessing this display of nature's artistry, it was thrilling, breath-taking, to watch the screen and see the myriad colors fade in and out and stand forth in third dimensional effect; colors ranging from brilliant warm tones to the subtle depths of purple chill, all reproduced in the glowing wonder exactly as it was reported: "The most beautiful sunset of fifty-five years."

As the picture sequence faded out and the lights of the projection room came up we stared at the blank white screen before us that had reflected a continuous flow of color, and sat speechless. Words failed us. There was no disputing the fact that an amazing mechanical process for the reproduction of color had been discovered. We had seen it. It was indelible in our minds. We'd have to get away from it, think about it before we could tell about it. It could be only an open, impartial, uncritical mind that could look upon such an achievement and conceive the vastness of its application for the interpretation of human ways in the days to come. Critical minds would be stopped, their imagination would be too limited.

For photographing and projecting, Thomascolor employs an optical system that embodies refraction, partial and total reflection to make four identical color corrected images simultaneously. A projection lens of singular ingenuity causes the light passing through the black-and-white positive film to be filtered and then colored with the four colors used in the system. The projected images are superimposed in full natural color upon the screen. No dyes, no toning or tinting of either positive or negative. The colors are due entirely to perfect spectral cut-off in making the negative and to projected and superimposed colored light to project the image upon the screen.

The fact that full color faithfully reproduced, can be achieved by two optical units small enough to be held comfortably, one in each hand, indicates the degree of refinement of the production units of Thomascolor.

The skillful operator will find Thomascolor a natural, easy, uncomplicated method of photography; simple, yet effective. Natural color photography with all the ease of working in black-and-white.

Thomascolor employs only a standard black-and-white single emulsion film as well as regular black-and-white technique and developing methods, from the exposure of the original negative through the processing of transparent positives. The only variance between black-and-white photography and Thomascolor is

that with a single shutter opening, four color separation negatives are exposed at the instant of exposure within the limits of the aperture on the film.

So there will be no misunderstanding of this basic point, it must be stressed that a Thomascolor motion picture negative consists of a single strip of single emulsion, ordinary panchromatic film, on each standard 16mm. or 35mm. frame, on which appear four black-and-white images, identical in every respect, except that they have been filtered through the colors of the process.

Since the Thomascolor has but a single aperture, and hence a single viewpoint, all parallax must obviously be eliminated. Perfect registration and identical image size are assured to within one ten-thousandth of an inch through the Thomascolor unit.

The optical unit which is so amazing to scientist as well as the layman, displaces the regular lens of the black-and-white camera and creates the four identical images as described.

The unit is available in varying focal lengths, and is so designed as to eliminate completely spherical and chromatic aberration and assure sharp focus and definition of all four images. The process is not an adaptation of the "one shot" camera to the motion picture camera. It is entirely a radical departure and employs neither beam-splitters nor photographic mirrors. After light is admitted through its single aperture, it is carried to the film plane by means of refraction, partial and total reflection. And at the filters, all images are of equal density.

The pictures are reproduced on the motion picture or still screen in natural colors through the medium of a black-and-white positive print, each frame of which contains, as explained before, four identical images.

The light from each image passes through a Thomascolor projecting unit, a color filter, and then the light from all four images is superimposed upon the screen in perfect register, and the pictures are free of color fringing. The projection screen can be approached to within arms length and still there is no apparent fringing of color nor does the picture lose focus. Objects appear sharp enough to be easily distinguishable even at so close a range. The definition, clarity of color and middle tones reveal new possibilities in this process. The color brightness is very high and is carried deep into the shadows.

The film is developed like any ordinary black-and-white film, and as all images are on the same strip, they are developed simultaneously. Hence, all shrinkage must be equal throughout. Thus, the images of the entire picture are in exact register. Therefore, the four images are automatically in register as to size as well as to superimposition on the screen at all times.

Printing of the film follows the black-and-white technique the same as the negative. Ordinary black-and-white

(Continued on Page 173)

STEADILY IMPROVED

THE PREFERENCE of cameramen and directors of photography for Eastman Films has a sound basis. In the face of wartime pressures, the exceptional quality of these films has been not merely maintained but steadily improved. Eastman Kodak Company, Rochester, N. Y.

J. E. BRULATOUR, INC., *Distributors*

Fort Lee

Chicago

Hollywood

EASTMAN FILMS

AMONG THE MOVIE CLUBS

Philadelphia Cinema Club

GEORGE PITTMAN won first prize with his film, "Trees," at the Annual Contest Night of the Philadelphia Cinema Club, held April 11. Other prize winners were: 2nd prize, "Gloucester" by F. M. Hirst; 3rd prize, "Bare Foot Days" by George Pittman; 4th prize, tie between "Down East" by A. L. O. Rasch and "A Day at the Zoo" by Dr. R. E. Haentze; 5th prize, "There is a Santa" by W. Brunner; 6th prize, "Thanksgiving Day Parade" by R. E. Haentze.

The Philadelphia club conducts its judging throughout the year. Each film shown at each meeting is voted upon by a committee of judges and given a rating. Toward the end of the year the films with the highest ratings are grouped and shown in competition with each other. Club members feel that this system encourages members to show more films throughout the year, and is a means of selecting better contest films as well as eliminating last minute jamming.

M.M.P.C.

GUEST of honor at the April meeting of the Metropolitan Motion Picture Club was Ralph E. Gray of Mexico City. Mr. Gray won the 1938 Hiram Percy Maxim Award, and is the producer of many films now used by the Office of the Coordinator of Inter-American Affairs. He screened "Paracutin," a picture of Mexico's great new volcano. It was in Kodachrome and was breath-taking. Also on the program was "Lake Mohawk, Preferred" by Leo Hefernan.

Tri-City Cinema Club

APRIL meeting of the Tri-City Cinema Club featured the screening of 1200 feet of 16mm. Kodachrome of the Brookfield Zoo, Shaw's Garden in St. Louis, Tri-City and Chicago Parks and the Chrysanthemum Show, photographed by A. R. Bruns. Also on the program was an exhibit of novice and advanced black-and-white prints and projection of the winners of the kodalide contest.

Utah Cine Arts Club

HIGHLIGHTING the April meeting of the Utah Cine Arts Club was LeRoy Hansen, who showed and discussed original drawings made for the Walt Disney film, "Snow White and the Seven Dwarfs." Films screened were "The Arm Chair Farmer" by Elmo Lund, "Highway Spots—Texas to Utah" by Norm Shultz, and three Mexican subjects, "Patzcuaro," "Orchids" and "Tehuantepec."

Westwood Movie Club

PROGRAM Chairman Ed Franke of the Westwood Movie Club is planning a series of interesting meetings for the summer months ahead. At one the members will make a sound movie. Another will be the Annual Gadget Exposition. Franke also plans to show outstanding commercial and information films, together with the winning movies of other clubs. At the April meeting three films, furnished by the American Cinematographer, were shown. They were "Two Kids and a Pup," "Vanishing Autumn" and "Tender Friendship."

Los Angeles Cinema Club

TWO unusually interesting films and some beautiful Kodachrome slides highlighted the program at the April meeting of the Los Angeles Cinema Club. One film was "Guatemala" in Kodachrome, by Harry E. Parker. The other was made by George J. McCarthy who was taken prisoner by the Japs in the Philippines. It was a Kodachrome picture of Shanghai, China. The Kodachrome slides, by Dr. E. Leslie Eames, depicted Oak Creek Canyon, Apache National Forest, Coronado Trail, Navajo Country and Canyon de Chelly.

New York Eight

FIVE prize-winning films were shown at the April meeting of the New York City Eight Millimeter Club, held at the Hotel Pennsylvania. Three of the films were photographed by Mildred Caldwell, president of the Long Beach Amateur Club. They were "In Our Garden," "Cat Tales" and "Happy Landing." The other films were "V—for Vacation" by C. W. Wade, and "Bohemian Baloney" by Werner Henze.

San Francisco Cinema Club

ASPECIAL committee is working out the details for the celebration by the San Francisco Cinema Club of its thirteenth birthday this month. The club is really getting along in years. At the April meeting the feature was "Skis to the Skyland," a 1200-foot Kodachrome subject loaned by the Sierra Club. "State Capitol," by Leon Gagne was also shown.

Washington Society

GEORGE MERRIKEN furnished chief interest at the April meeting of the Washington Society of Amateur Cinematographers with the screening of a new film created for a recent bond-selling campaign in the nation's capitol.

Saint Louis Club

THREE films were screened at the April meeting of the Amateur Motion Picture Club of Saint Louis. They were "Wonder Film" by F. J. Hollywood; "Our Vacation in Colorado" by Mr. and Mrs. F. J. Sperka and their daughter, Dorothy; and a special western vacation picture made by Ed Miller.

Brooklyn Amateur Club

FOUR films made up the screen fare of the April meeting of the Brooklyn Amateur Cine Club. They were: "Churches on Parade" by Dr. A. Gortz, "Vacation in New England" by Francis Sinclair, "An Old Christmas Custom" by Charles Ross, "Travel Film" by Dr. J. P. Berman.

"Romance of the Gyroscope"

REVIEW of an industrial motion picture.
Sponsor: Sperry Gyroscope Company, Inc., Great Neck, Long Island, New York.

Type: 400 ft., 16mm. sound, black and white—general interest.

Producer: not shown.

Narrator: not shown.

Sound quality: good.

Continuity: well handled.

Technique: good.

Availability: any interested groups may write to above address, to request loan of film.

Subject Matter

In an interesting manner, this film portrays how the forces of nature have been harnessed, in various gyroscopic instruments, to facilitate the navigation of ships and planes. An opening sequence effectively illustrates the historical development of the wheel, from the primitive use of a rolling section of a log, to the many modern applications of the wheel principle. Some of the Sperry products are briefly explained, such as the Gyroscope, the Gyro-Compass, and the Gyro-recorder. The film has excellent general interest, and should appeal to technical and non-technical groups. It would also be a welcome addition to any school visual aids library.

A supplementary reel, also 400 ft. in length, entitled, "The Gyro Compass," is available either separately, or attached to "Romance of the Gyroscope." This reel offers a more detailed description of the purpose and use of the Sperry gyroscopic instruments, for those audiences that are more technically inclined.

(Continued on Page 177)

TESTING NOW!

For Peacetime 16 mm. Projectors

For over two years, thousands of AMPRO 16 mm. sound projectors have undergone gruelling tests—from arctic wastes to South Pacific jungles, on aircraft carriers, destroyers, submarines—under blazing sun and in subzero temperatures. Out of this cruel laboratory of war have come sturdy, practical 16 mm. projectors exceeding even prewar AMPRO efficiency. Today these "war-tested" AMPRO machines are being made now exclusively for the United Nations armed forces. *When peace comes—they will be available for bringing new worlds of entertainment and education to the home.* Write today for Ampro catalog of 8 mm. silent and 16 mm. silent and sound projectors.



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Aces of the Camera

(Continued from Page 152)

year, Ralph Staub has one of the most interesting and diversified assignments in Hollywood. His career, which started as assistant cameraman with Ruth Roland in 1915, has piled up some interesting facts. He has photographed more stars than any other cameraman, has made more short subjects than two or three other people put together, five-hundred and eighty-two of them since 1920, and we feel no one is going to contradict us if we say that Ralph is positively the only short producer who has ever had the wife of the ambassador of a great power come out to Hollywood to help him cut a picture.

This is how it happened. Ralph was making a "Screen Snapshot" out at Desert Camp Young, in the California Desert. The occasion was when Leopold Stokowski conducted one hundred members of the Los Angeles Symphony Orchestra in the playing of the Seventh Symphony of Russia's great contemporary composer, Shostakovich. The audience was sixteen thousand soldiers, and the guest of honor, Mme. Litvinoff, wife of the Russian Ambassador to Washington at that time. The music was recorded, and the scenes shot at night; out in the open air, under the stars. It was a great achievement. With only two cameras and one small generator the coverage was remarkable. The scenes of the orchestra, and the reactions of the sixteen thousand G.I.'s, sprawled out on the sand, listening with mixed emotions, made it an outstanding subject.

The recording was better than hoped for, under the circumstances, but there was too much music to go into one reel. It was to help Ralph solve the problem of what parts of the symphony to use in the picture that Mme. Litvinoff made the trip to Hollywood.

She turned out to be a very charming and gracious lady, and at her request Ralph sent a print of the reel to Stalin by bomber. It was appreciatively received by him, and the people of Moscow, according to the message brought back by the Russian cameramen who recently made an official visit to Hollywood.

They call Ralph Staub, "The One Man Film Co.," and before the introduction of sound he was virtually that. Throwing his camera into a car he went out alone to get his shots, and then came back to the studio to edit and title them. As an interesting commentary on the growing complexity of film making, he currently travels with a crew of fifteen.

When he started out in the motion picture business, he was only sixteen. When he was 21, Pathe made him a first cameraman and sent him to Alaska. He thinks he was the youngest cameraman in the business at that time. But he had a lot of confidence because he had had his training, for six years, under such men as Tony Gaudio, Alfredo Gaudalfi, Victor Milner and Sol Polito.

It is clearly indicated that Ralph's early training was not in vain. "Screen Snapshots," being concerned mostly with the off-stage and unrehearsed doings of movie and radio personalities, whom he must of necessity photograph under conditions very different from those in the studio, but who nevertheless appear in "Screen Snapshots" as handsome and as glamorous as their fans are accustomed to see them. Under the circumstances it is a rare tribute to Ralph's camera skill that he has never had a star turn him down. Satisfied with his treatment of their famous faces, they have permitted themselves to be photographed again and again. He has enough footage of Mary Pickford, for instance, shot at various times, and at various functions throughout the years, to make a full length picture.

With the idea that his audience might like to get a look at the stars of the cinema south of the border, and as a sincere gesture towards fostering inter-American friendship, "Screen Snapshots" recently produced a most interesting reel in Mexico City. Here are scenes behind the scenes of the booming Mexican film business about which we hear so much. And informal shots of the Mexican stars, whose appeal in the Latin American countries begins to rival that of our own stellar personalities. The response to this reel indicates an interest that should promote more of the same. It was produced with the cooperation of Joseph Breen, of the Motion Picture Society for the Americas, and Francis Alstock, of the Office of the Co-ordinator of Inter-American Affairs, and its usefulness as an ambassador of goodwill between the two countries was attested by an encomium Ralph received from Nelson Rockefeller.

Ralph has always had a penchant for making shorts. When he left Columbia in 1934 to go to Warner's it was as producer and director of short subjects. In fact, the ten features he directed for Republic before returning to Columbia in 1940 seems to have been the only divergence from the field in which he enjoys such an excellent reputation.

One short he made, "Jimmy Fidler's Personality Parade," which was released by M.G.M., ranks on a return for investment basis as possibly the biggest money making short ever made. Ralph produced it with his own money. It played in more than 8400 theatres in the United States alone. It made so much money, he decided to take a vacation. The vacation lasted eight months, and that eight months constitutes his only period of unemployment in twenty-nine years.

The thing that makes Ralph's short subjects consistently click is not only his ability to write an entertaining commentary, direct his people in their impromptu, on-the-spot actions, or even his facility with a camera. It is an uncanny feeling for the 'right idea.' You can't train a man to get 'right ideas.' Some of us get them once in a while. Ralph gets one every month.

One idea for a subject grew out of the unkind publicity given Hollywood by certain of its detractors to the effect that too many film personalities were being handed easy commissions in the Services. Ralph knew that this was true in only a few instances, and completely untrue in most. He decided to vindicate Hollywood, and set out with his camera to present the other side of the story. It took him three months. But with the authority of the War Department he got it. Traveling to the U.S.C.G. base at Alameda he got scenes of Seaman 2/C Cesar Romero; out at Luke Field in Arizona he got shots of Sgt. Gene Autry; up to Stockton he went to get a screen interview with Lt., now Major Jimmy Stewart, who had started out from scratch. In the U. S. Marine Base in San Diego he found Pvt. Tyrone Power putting a squad through a drill routine; and Alan Ladd on K.P. duty. He found a lot of the boys who were really earning their \$50.00 per. And he found he almost won an Oscar with the reel for the best short subject of the year.

New Filmosound Releases

PITTSBURGH (Universal)

No. 2443

11 reels

Behind the powerful romantic struggle of three young-Americans, emerging from their humble origins in a small coal-mining town, is an inspiring story of how industry geared itself for America's all-out war effort. All star cast includes Marlene Dietrich, Randolph Scott, John Wayne, Frank Craven and Louise Allbritton. Available from June 11, 1944, for approved non-theatrical audiences.

NURSING—A CAREER OF SERVICE

No. X960 Silent Monochrome 28 min.

No. CX960 Silent Color 28 min.

Step by step progress of student nurse. Excellent for vocational and social studies. (University of California)

THE AMERICAN NILE

No. 937

11 min.

Astounding relics of dead Mayan civilizations along the Usumacinta River, separating Mexico and Guatemala. Supposed descendants, now the most backward people on our continent. (Count Byron de Prorok)

New Company Formed for Color Television

Associated Filmmakers, Inc., has established a studio on the roof of the Scribner building, New York City, for the production of regular and color television programs. Stanley Neal is president of the company, which will use the English Brewster color process. Neal was formerly managing director of Revelation Films, of London, owner of the Brewster patents.

Two Brewster color cameras will be brought from London and others will be built in New York.

Dartmouth Exhibits

THE development of three-dimensional photography from the hand stereoscope of Victorian days to vectographs used in today's aerial warfare is the subject of an unusual exhibition at Dartmouth College for the benefit of Navy V-12 trainees and other students. The show, arranged by the college's art department with the cooperation of the Dartmouth Eye Institute, has been viewed by Navy training officers and has created special interest in the possibilities for new teaching methods.

Entitled "From Daguerreotype to Vectograph," the exhibit is the first of its scope ever to be shown and includes rare stereoscopic photographs taken before the Civil War.

The exhibit presents the history of the stereoscope, its design evolution, evidences of its great vogue in the early part of this century, and its present use in vectograph form as a means of visual instruction in air photography, descriptive geometry, map-making, and other subjects applicable to war-time teaching.

Prominently displayed in the exhibit is the familiar hand stereoscope invented by Oliver Wendell Holmes, once a member of the Dartmouth Medical School faculty. Early in its history the stereoscope was mainly a social success, replacing the family album for entertainment. In the exhibit at Dartmouth, a Victorian parlor, complete with stereoscope, sofa, parlor table, knick-knacks and painting of fruit and fish, is surrounded by many of the famous stereoscopic slides of the period: photographic scenes showing the opening of the West, Civil War days, views of the White Mountains, Gay Ninety family life, and what corresponds to present-day comics.

The scientific principle which explains the depth-producing effect of the stereoscope is based upon the fact that in reality we perceive an object in three separate ways: one image is seen with the left eye, one with the right eye, and a third is fused by the brain from these right and left-eye images. It is this last image which has depth.

For viewing specially drawn pictures or photographs of a new kind, called vectographs, polarized spectacles which comb out certain light vibrations and transmit others, are used to bring out depth. This is today's descendant of the stereoscope with its two pictures, solving as it does many of the problems of presentation of three-dimensional pictures. Especially complete is the collection of vectographs which show the advantages of depth perception in many problems applicable to war instruction: to solid geometry, celestial navigation, machine shop practice and assembly of mechanical and airplane parts, as well as interpretations of aerial vertical and oblique photographs, and recordings of medical gross specimens. One room of the exhibit in Hanover is given over to a screen-showing of three-dimensional pictures in color. For this also, the members of the audience are furnished with polarized spectacles. These pictures with



Out of the laboratory of war-time necessity—and the relentless proving ground of war under every possible condition of climate, temperature, and shock—is emerging a NEW, postwar DEVRY—a DEVRY worth waiting for, whether it be 8mm., 16mm., or 35mm. Camera or Projector—or any other product in "the World's Most Complete Line of Motion Picture Equipment." On V-Day, DEVRY will be ready with finer, sturdier, lighter, and reasonably priced motion picture equipment and associated electronic products—designed, engineered, and built to war-born perfection. DEVRY Corporation, 1111 Armitage Avenue, Chicago 14, Illinois.

ANOTHER "FIRST" FOR DEVRY

To the company whose founder gave the world the idea of *portable* motion picture projection—is awarded another top honor—its *third consecutive Army-Navy "E" pennant for war production excellence*. DEVRY is the only manufacturer of motion picture sound equipment to fly the Army-Navy "E" pennant with *two* stars. This means that DEVRY has produced *quantity* and *quality on schedule* for 18 consecutive months. To DEVRY workers, whose tireless efforts made this third "E" for-production-excellence award possible, it is reassuring that each shipment of cameras, projectors, and electronic gunnery trainers built by them helps to hasten the dawn of a NEW and SECURE Tomorrow!



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their startlingly vivid effects of depth and color, make the observer realize a new understanding of seeing.

That the artist has long known ways of tricking the eye into illusions of depth and perspective are shown by drawings furnished the exhibit of Paul Sample, Dartmouth's artist-in-residence. A distorted room has been provided by the Dartmouth Eye Institute; this shows effects of viewing with one eye different from viewing with two eyes.

DeVinna in Marshalls

Captain Clyde DeVinna of the Marine Corps, former MGM cameraman of "Trader Horn" and "White Shadows" fame, is now on active duty in the Marshall Islands, according to letters received by former associates. DeVinna is a member of the American Society of Cinematographers.

A Newcomer Looks at Hollywood

(Continued from Page 164)

a man stands there in front of me and sez, "do something sexy". What to do! Well, I thought, I could walk up and down and swing my hips a la Mae West, only Ezry had just told me not to move off the quarter on the floor. What to do! I could roll my eyes and say something suggestive, or sing a cute little ditty liken unto "Dirtie Gertie From Bizerte", only there wasn't any soundtrack, and "Dirtie Gertie From Bizerte" might not sound so good if you couldn't hear it . . . with your eyes rolling. Ah! I could do a strip tease! Yessir, a strip tease is "something sexy". An excellent idea! But, alas, I couldn't do that! I had on exactly two garments; one of which was my slinky black dress. (The first one to guess what the other garment was gets a free eyedropper of gasoline). No, I definitely couldn't do a strip tease. To remove either of those two garments would not have been just a "tease", but a direct invitation. What to do! Well, I just stood there and winked at Ezry. Alright, smarty, what would you do? What would you say if someone suddenly appeared beside you with a mike and said, "Say something". You'd be speechless, too, Butch. You want me to tell you what you'd say? You'd say, "Why . . . gulp . . . whadda ya want me to say?"

So, anyway, I just stood there and

winked at Ezry. On the screen I must have looked like I had one of those nervous twitches slightly out of control. I guess eventually Ezry got weary of watching me twitch with a smile on my face without showing my teeth, because he turned away from me with a shrug that plainly said, "If that's your idea of something sexy, sister, then I'm not interested", and about that time a brilliant idea hit him. He plunged at me, snapped his fingers and said, "Cry! That's it! Let's see you cry! This talent scout says you're such a good dramatic actress . . . let's see how you can emote." (Now, look, even Norma Shearer has to have time to warm up before crying!)

I closed my eyes. "Hold onto your hats, kids, here we go again. Dear God, help me bear it. Murder! That's it! So help me, I'll do it! I wonder what they'd do to me if I pulled off his leg and beat him to death with it! I'll take a chance! Maybe they'd hang me, or electrocute me, or just quietly hold me under water in the bathtub. I'll still take a chance! It'll be worth it! Then I'll go fer, fer away and make like I never heard of a place called Hollywood. I'll change my name to Snicklefritz, and live happy ever after."

When I opened my eyes Ezry either saw the blood in them, or decided he had been a bit of a heel, because he sat down and talked with me after that. Talked quietly. And I stood there and answered his questions with the camera turning and turning . . . rolling away a lot of dreams, and hopes.

Ah, Cameramen, you unsung heroes of Hollywood. You know the place you fill. You know you can make or break an unknown with the twist of a wrist (or a star for that matter). Be patient with us. Be easy with us. We come to you with hearts that are eager . . . but nervous. We need a quieting and encouraging voice, and a sympathetic heart. Our fate is in your hands. You know it, and we know it. You are responsible for keeping our glamour girls young and beautiful. There should be many Hollywood souls full of gratitude to you.

I packs up my troubles in my old kit bag, along with my slinky black dress, and my false hair that had long since given up the struggle and collapsed about my feet, and my broken but still stubborn heart, and homeward plod my weary way.

My little tale of woe almost ended here. BUT . . . woe or no, I continued hitching my wagon to a star. (These days I'm also just hitching my wagon, period. Anyone with an extra gasoline coupon can contact me by calling . . . well, I guess I can't give my telephone number. I just called my Ration Board and they said no.) I'm so glad I'm not the type who discourages easily. Nothing could convince me I wouldn't get another opportunity and my sad little experience certainly didn't embitter me toward cameramen. I knew my chance would come again . . . and I knew my cameraman would be a good Joe.

And I was right. Recently I was tested at Hunt Stromberg's with Lee Garmes, A.S.C. photographing. At the beginning, I was a bit nervous, worried about lines, and jittery. But the minute Lee Garmes said to me, "Hello, there! I'm your cameraman", and grasped my hand, I felt my jitters slipping away. And when he introduced Andre DeToth as my director . . . well, that did it! Now there's a director for you. You'll be seeing him up around The Top soon. I relaxed. I knew I was in friendly, and very capable, hands. No more tension . . . just harmony. An excellent director (that's DeToth) plus an excellent cameraman (that's Garmes) plus a capable actress (that's me) equals a good test. And that's what it is. Billy Gordon, casting director for Stromberg, says the test can be shown to other studios soon, and everyone at Stromberg's says it is excellent.

Since the test, I've worked in two pictures for Columbia, "Mr. Winkle Goes to War", starring Edward G. Robinson, and "Calling All Stars".

So, Hollywood, you're not so tough. That's just a false front you wear. You couldn't really be tough . . . your heart's too big.

Color Pix That Sing

Telefilm and Bob Crosby are experimenting with a new novelty. Pictures in 16mm. color have been made of the band playing a series of popular musical numbers. Filmed with sound, Telefilm will service them to camps as well as other service entertainment centers.

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Thomascolor

(Continued from Page 166)

orthochromatic film is used for the positives. The same equipment and chemicals as are now employed in any good laboratory are used.

Enlarging and reducing are restored to a normal process by the Thomascolor method. A 16mm. negative can be enlarged to 35mm. A 35mm negative can be reduced to a 16mm. print.

The use of super-panchromatic film makes possible all the exposures used in black-and-white work. Where a faster emulsion is necessary the cameraman can turn to it with confidence because the optical unit transmits all of the light to the film plane. There are no intervening neutral density filters to hinder the full action of the light on the emulsion.

The Weston calibration for exposure is rated at ONE AND A HALF (1½) HIGHER stop than the Weston quotation for any good negative stock. Thus, it will be understood *why* Thomascolor can reach into low key lighting successfully, with the exposure based on an exposure of one-fiftieth (1/50th) of a second. With coated lenses, the Weston calibration should be read ONE (1) stop higher than the Weston quotation.

The shutter speeds at which Thomascolor may be exposed are dependent upon the type of negative stock used. Under favorable conditions speeds up to 1/1000th of a second have been employed in both motion and still work.

In projection, the light from an ordinary lamp-house is ample. Since there is only white light projecting through the single emulsion transparent print, and the light transmission is as great as with black-and-white, with no dyes to hold it back, the light transmission to the screen is nearly total. An unusual brightness range is the result.

As in black-and-white, there is no change of manipulation of registering and printing of the sound track.

Special effects and trick work are practical and easy to control due to the fact that the process is basically black-and-white and the color results from white light rather than dyes.

The Thomascolor photographing unit is a single assembly devoid of moving parts. It takes the place of the lens in all standard still and motion picture cameras. The change-over is accomplished as simply and as quickly as with any black-and-white lens.

Similarly the Thomascolor projector mount, which is about the size of the average projector lens, slips into place where the regular projector lens is taken off. There are no moving parts in this assembly either. The projector has all the flexibility of the standard projector lens. Adjustment for focus is just as simple, length of throw and superimposition of the four color images follows as simply. Projection is made on stand-

ard, portable or giant screens. Since four color separation images take the place of a single 35mm. black-and-white frame, the same area of light is actually transmitted to the screen as when black-and-white pictures are shown. Superimposition of one color upon another eliminates any disposition to graininess and intensifies the brightness range of the colors.

Mr. Thomas has plans well advanced for the manufacture of special cameras to serve the Thomascolor field; many improved features will be included. However, since there are many good cameras in use for such work now, an optical unit will be provided which will convert a black-and-white camera for color work, and back to black-and-white, as the need may be. Thus, a good camera will not have to be discarded. The addition of a unit no larger than the ordinary lens will convert many models of cameras now on the market to Thomascolor.

For the amateur an interesting field has opened. For the first time he can have the complete processing of color under his own direction to play with as he chooses. He can be the master of his own photographic world as it exists in his own mind. He can install his own little laboratory and experiment with his own creations and his product will reflect the progress of his imagination and study.

Thomascolor can be applied to still photography as well as motion pictures, and prints of full color value on paper are easily made from Thomascolor negatives. Re-photographing transparent positives as the first step in making a print on paper is unnecessary. Thomascolor makes its own negative separations. The difference between transmitted light (transparent positives) and reflected light (prints made on paper) can be compensated for in the lens mount of the Thomascolor Camera. The photography can be made suitable for either type of rendition.

Lighting Sunday Movies

(Continued from Page 157)

der the pergola where the older folks had gathered. Some could not walk so we photographed them right where they were sitting by the use of mirrors reflecting the sunlight to our reflectors by which we modeled our subjects. Of this kind of illumination I will go into more detail with drawing in a later issue.

Up to the present I have never dwelled on the exposure, for I presume you all have your light meters and experience. Neither have I dwelled on why we stop down the lense and give more exposure or visa versa, but I am sure if you are interested in this, it can be taken care of if you write the Editor of this magazine.

Retained by Du Pont



J. A. Ball, pictured above, noted color expert, has been retained by the Photo Products Department of E. I. du Pont de Nemours & Co., Inc., as a consultant. Mr. Ball formerly was an officer and top technical expert with Technicolor for many years.

DeVry Again Honored for Its War Effort

THE DeVry Corporation, 1111 Armitage Avenue, Chicago, Ill., has been presented with the second white star for its Army-Navy "E" Flag, denoting continued production excellence for the war effort on the part of its personnel. The DeVry Corporation manufactures motion picture sound equipment and secret electronic training devices incorporating motion picture projection principals developed by DeVry's founder, the late Dr. Herman A. DeVry.

In a letter to President William C. DeVry, C. C. Bloch, Admiral USN (Retd), Chairman Navy Board for Production Awards, wrote:

"It is a pleasure to inform you that the Navy Board for Production Awards has granted the Armitage and Wolcott Avenue Plants of the DeVry Corporation a second renewal of the Army-Navy "E" Award for meritorious service on the production front.

"The men and women of your plants have continued to maintain the high standards they set for themselves when they were originally awarded the Army-Navy "E." They may well be proud of their achievement.

"There are being forwarded to you two new pennants with two stars affixed to each which should be received in the near future.

"The additional white star, which the renewal adds to your Army-Navy "E" flags, is the symbol of appreciation from our Armed Forces for your continued untiring effort and support so necessary for victory."

Cameramen at War

(Continued from Page 162)

"It was an inspiring sight to look around at the group formations of our attacking force. One hundred and seventy-five bombers and fighters gliding steadily along in even flight. They had an aspect of grim viciousness about them that shot through us thrills of fascination as we watched them against the increasing dawn of brightness; those to the right were silhouetted in black with a thin halo riding over the crest of their wings, while those to the left reflected back the pale pink glow of the sun's first rays creeping up to us out of Palestine.

"Looking out over the even, smooth-gliding formation reminded us of huge birds out of a fairy tale of another world. It hurt to think how some of them would be crippled, silenced.

"Reaching the fifteen thousand foot level we crossed over the high ridges. The world was lighting up below and lay open all the way to our target. By now a few of the bombers and several fighters had turned back on account of engine trouble. They would be spared for another raid. On a long run from the home base like this one, every mechanical function had to click perfectly.

"The light was coming up fast and visibility was perfect. Ahead of us lay our target, and news of our approach must be flashing its warnings by this time. We gradually worked lower until we had dropped to ten thousand feet. Through our glasses we could begin to pick out objects below us as we stayed at level flying. We could see people looking up at us as we passed over villages and towns. They'd point up at us and then break for cover. They were taking no chances.

"Straight ahead of us and only minutes of flying time, lay the oilfields with its derricks and refineries and railroad yards, and people scurrying in what seemed frantic activity. Faintly we could hear the siren alarms. We swooped down to a lower level as we rushed ahead. This was going to be a low-level raid. Enemy fighters were rising to meet the assault, and the barrage balloons were running up the full length of their cables. As we pulled out of our dive at our low level, we saw people that stood still and watched us. Their only display of excitement was vigorous waving, like they were actually glad to see us. They must have known, or guessed, what was going to happen. That only the oilfields would be bombed. Except for the crews of ground batteries we tried to dodge, the oilfields seemed to be deserted.

"Ack acks were blazing away all around us. Hell broke loose as we dived to the level of tree tops to confuse the ground batteries' aim. Our speed was too fast for their aim at that low level, and the camouflaged topside of our planes confused the Nazi fighters above us. It was tricky work dodging among those trees and derricks and avoiding the balloon cables. Our bombs were now blasting all over the place, toppling over derricks, blow-

ing buildings apart, setting fire to storage tanks with the flames and black smoke spurting high above our level. With the noise of bombing, sirens, and ground batteries and the fire and destruction, the place was turned into a seething inferno.

"One of our bombers ahead of us and to the left must have received a direct hit from one of the ground batteries for it suddenly made a dive and crashed, turned over, scattered, and caught fire. Another bomber collided with a balloon cable and crashed.

"With our bomb-racks unloaded we used the smoke of the burning oil to screen us as we took altitude and turned for home with a few holes punched in the old bomber that let daylight in and to certify what we'd been through. We had only one casualty, a waist gunner wounded in the hip. Straight up into altitude we fought our way back over the mountains and the Mediterranean and flattened out on our field at dusk. What a day!

"Among those who did not come back out of that raid was T/Sgt. Kenneth Chaney of Cedar Falls, Iowa. He was given up for lost after the plane he was in exploded over the Mediterranean. Weeks later word came through that he was safe. Kenneth was one of the keenest daredevils in the African Air Corps. He figured his chances as fast as he ran along with danger at his side. He always skimmed the edge of peril enough to miss it. A man absolutely devoid of the sense of fear—that's why he always came through."

When the campaign in North Africa had ended and Fernstrom had recovered from his wounds, he and his crew returned to the United States with the negative his group had exposed. It was then sent to the First Motion Picture Unit where writers, cutters and editors, built the story in the cutting rooms from a "Day in the life of a Fighting B-25" to "Earthquakers," a generalized history of the medium bombers in the North African campaign. The picture was completed January 18, 1944.

Before leaving Africa, Fernstrom accumulated over two hundred combat hours, was awarded the Distinguished Flying Cross, the Air Medal with Cluster, and the Purple Heart. He returned to the first Motion Picture Unit where he assisted Major General Greenwald in the training and activating of additional units for overseas service. He has gone back overseas with Greenwald.

When the story of aerial combat over North Africa and Europe is finally released to the public, the exploits of the famous B-25 bomber will be legend. From all kinds of flying fields in all kinds of weather, against heavy enemy fire, both from the ground and enemy planes, this great plane has carried on obedient to the crews who operated them. There is a great story about it and the men who fly it which can only be properly told by motion pictures.

"The good that planes do and the men who fly them, flies after them."

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Walt Disney Studio

(Continued from Page 156)

methods of warfare meant constant readjustments in each picture while it was in production. This, of course, is of little assistance in meeting a deadline.

Yes, becoming a war plant forced, in many departments, a complete "about face." Fortunately, this was not true with all departments. The functions of some remained primarily the same. Included in this group might well be the Story Department. All scripts are prepared in a similar manner, and though training scripts demand more precision of thought—at the plant there was always the temptation to "gag" them up—primarily they require the same procedure as a cartoon, for they, too, just tell a story. Also in this group are the Inking and Painting Departments, the Camera Department, and Sound Recording Department. The work of these groups was accomplished in much the same manner as it had been during peace-time.

However, there were other departments which had to absorb the full weight of this new-type product. Our Layout Department, which actually designs the mechanics of the action to obtain the desired result, found itself dealing with difficult and highly mechanical problems. Small objects, such as planes and ships moving at a slow rate of speed on the screen, comprise one type of problem. This usually encountered where diagrammatic presentation must be animated at an extremely low rate of speed. As you are generally aware, it is our production practice to carry each object that is animating on the screen on a separate level of celluloids superimposed one over the other on the camera table. In one particular instance a squadron of 12 torpedo planes was making passes at an enemy ship. Each plane was moving independently of the others, and it became necessary to make a separate camera exposure for each element in the scene—one for the ship, one for the wake of the ship, one for each plane, etc. On approximately 1000 ft. of animation we shot 18 exposures for each scene thus actually increasing the shooting time for each scene some 18-fold, plus the normal margin for error on retakes. We figured we had quite a headache.

Before our Camera Department began with each of their 18 exposure scenes, layout men had to design the camera operation. For men normally accustomed to planning and designing a Donald Duck dance or a Mickey Mouse piece of "business," this type of work called for considerable resourcefulness. Layout men, previously interested in the creative and artistic quality of a set or design—a "background," as we call them—suddenly found themselves using slide rules to figure out camera moves calibrated at times to 1/100 in. Perhaps on these departments the greatest load has fallen.

The only group that runs a close second is, I believe, our Special Effects Camera Department, for pure animation as drawn by the artist has its ultimate

mechanical limitations, and it became necessary for our Special Effects Department to determine methods of achieving a marriage between real photography, animation photography, three-dimensional model work, and any other technique necessary to solve a given problem.

The studio personnel concerned with these particular problems have done a commendable job in devising new methods and sometimes unearthing old ones, cleverly renovated, to achieve a most acceptable photographic result. No better example of this is the use of cutout drawings. Twenty-five years ago, before the late Earl Hurd discovered and devised the now accepted use of celluloids in animation, it was the common practice to make drawings on a piece of paper, and then cut out the character in much the same way that a paper doll is cut out by a child. This cutout character and, of course, many others showing the character in different positions were then glued to the background before photography was made. The use of celluloids with its transparency permitted the elimination of this procedure and pushed the science of animation many years ahead.

Strangely enough, certain problems were thrown to our Special Effects Department on training films that were apparently insolvable through ordinary techniques. The final answer came in going back to the old cutout method. It is true that it was a modern version of this technique, but the principle was fundamentally the same. This occurred in various instances where the story continuity called for a small object, perhaps a plane, to come into view from infinity and slowly animate through a tactical maneuver, maintaining throughout precision movements simulating the actual flight attitudes of the plane. When such demands are made involving the animation of objects no larger than 1/2 in. it is virtually impossible for an artist to make a series of drawings animating these movements, and then have the drawings traced and painted on celluloids without the final results appearing to jitter and shake on the screen. However, a small cutout plane the same size, animated by hand with the help of pantographs which eliminate the inking and painting function, can be moved, if the cameraman is steady enough that morning, in such a manner as to reduce jitter to a minimum.

We know that our experiences are perhaps no different from those encountered by thousands of other organizations which found themselves squeezed under wartime production pressure. Surely in all plants where it was necessary to meet stringent and shortened deadlines, a method that required less time and less money was found. The accounts of our men and our machines on the battle fronts all over the world are, I believe, testimony to this assumption.

After victory is ours and the type-writer manufacturer again manufactures typewriters, and Walt Disney again turns to fantasy, we will all feel that the stress of the stringent schedules and budgets has forced us to know our business better.

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- ★ Auricon 16mm. sound-on-film recorders and cameras are serving the Nation's War effort with Military and Government Film Units, and with civilian organizations producing essential morale and industrial training films. If your work in such fields makes you eligible to purchase new equipment, we invite you to let our engineers show you how Auricon portability and professional performance will simplify your recording problems.

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Eastman Presents 300 Films To The University of Chicago

DONATION of the Eastman Kodak Company's 16mm. library of approximately three hundred "silent" classroom films to the University of Chicago for distribution through that institution's affiliate, Encyclopaedia Britannica Films, Inc., has been announced in New York by the board of directors of the affiliate.

This action brought to completion an educational project undertaken more than fifteen years ago by Kodak for the purpose of establishing classroom motion pictures on a practical basis.

Encyclopaedia Britannica Films, related to the encyclopaedia as well as to the university, also distributes the sound motion pictures of the recently acquired Erpi Classroom Films and thus now will offer both sound and silent educational films.

Adolph Stuber, vice-president of the Eastman Kodak Company, declared in making known his company's decision to donate the Eastman classroom films to the University of Chicago: "The Eastman Kodak Company is gratified that its pioneering efforts in the field of classroom motion pictures are culminating in the present development. As early as 1923, Mr. George Eastman envisioned the use of motion pictures produced specifically for classroom instruction but found little prospect at that time that any organization with sufficient resources would enter upon a program to produce films of this type.

"An educational experiment was conducted, under the supervision of Dr. Frank N. Freeman, of the University of Chicago, and Dr. Ben D. Wood, of Columbia University, to test the educational value of motion pictures. As a result, Eastman classroom films numbering close to 300 subjects in the fields of geography, science, history, health, nature study, religion, applied art, English, agriculture, and medicine were produced.

"It can now quite safely be said that the place of motion pictures in the field of visual education is firmly established . . . and the Eastman Kodak Company can bow out."

In accepting the Eastman gift, Robert M. Hutchins, president of the University of Chicago, said: "Britannica Films is now in such a commanding position in this field as to have a clear responsibility for the continued development and expansion of this educational facility. The film organization will have the full experience and knowledge of the university to draw upon."

William B. Benton, chairman of the board of Encyclopaedia Britannica, Inc., and vice-president of the University of Chicago, said: "With the Eastman films, plus the Erpi classroom reels, Encyclopaedia Britannica Films, Inc., has become the distributor of the only library designed for curriculum use. The university now is in an ideal position to take leadership in the entire new area of visual education. The institution's sound and silent films, each group having its special virtues, are products of an investment of several million dollars."

Mr. Benton added that plans are being made for expanding facilities, and that Stephen M. Corey, professor of educational psychology at the university, is on leave for full-time work on production plans.

E. H. Powell, president of Encyclopaedia Britannica, announced that E. E. Shumaker will continue as president of Encyclopaedia Britannica Films. Mr. Powell further pointed out that Britannica's extensive research facilities will be made available for the film company.

The board of directors of Encyclopaedia Britannica Films, Inc., is composed of some of America's best known business and educational leaders. These are: William B. Benton, chairman of the board of Encyclopaedia Britannica and vice-president of the University of Chicago; E. H. Powell, president of Encyclopaedia Britannica; Chester Bowles, OPA administrator, Washington; Marshall Field, publisher; Wallace K. Harrison, architect; Paul G. Hoffman, president of the Studebaker Corporation; Ernest Hopkins, president of Dartmouth College; Robert M. Hutchins, president of the University of Chicago; Henry R. Luce, editor of Time and Life; Beardsley Ruml, treasurer of the R. H. Macy Company; Harry Scherman, president of the Book-of-the-Month Club; M. Linclon Schuster, partner and co-founder of Simon & Schuster; E. E. Shumaker; president of Encyclopaedia Britannica Films; John Stuart, chairman of the board of the Quaker Oats Company; and Wayne Chatfield Taylor, Undersecretary of Commerce, Washington.

Cameramen Casualties Heavy, Says Col. Capra

Ten of the 150 service cameramen covering the Italian campaign for the American forces have been killed in action, Col. Frank Capra reports.

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"Romance of the Gyroscope"

(Continued from Page 168)

Scenes of the instruments in both films are cleverly interspersed with well chosen views of various ships and planes, adding dramatic interest to the film subject.

Technical Comment

In attempting a constructive analysis of the technique used in making these films, we hope not to detract from their educational or general interest value, as both films really do a good job and will be enjoyed by any audience. A minor point is the use of the title, "Romance." Numerous industrial films have been made with similar titles, with questionable appropriateness, applying to any kind of a product from peanuts to pottery. Even the first user of the "Romance" title might have difficulty demonstrating the romance.

Good taste was shown by having music only behind the opening and end titles. Many commercial films have suffered by misuse of a musical background between every pause in the narration, usually picked up from poorly selected records, inexpertly "mixed." The opening music in the Sperry films is adequate, but seems a little dreary, and something in a more dramatic tempo might have been more appropriate to the film subject.

The narration is well written and accurately synchronized with the illustrative scenes. The narrator, whose name is not shown, has a voice that reproduces well on 16mm. film, although his style seems a bit formal.

Continuity and photographic treatment throughout is well handled, and, although no production credit is given, the production staff handled the assignment in a capable and professional manner.—Ed Pyle.

Allied Films Will Replace the Nazi

AS SOON as the Germans are driven out of Holland, American and British movies will replace the Nazi propaganda films now featured by Dutch houses, declares Charles J. M. Welter, chairman of the newly-created temporary committee of film examiners for the Netherlands. Welter, former Dutch Minister of Colonies, was appointed to his new post in London on April 3.

The committee's functions, he stated, hinge upon an article of the Dutch Film Act which prohibits the showing of movies "calculated to debase morals or likely to disturb law and order." This would immediately rule out most German films now being exhibited. For in addition to the obvious Nazi propaganda pieces, the invader has flooded the Dutch market with products such as "I'll Take Care of Your Wife," "Stag Night," and the "Stratagem of Love."

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British Information Services Announce More Sound Films

THE British Information Services, which last month announced a large list of 16mm. sound film releases, this month announce additional films now available. Some are for sale and some for loan at service charge. For information regarding acquiring them write to 30 Rockefeller Plaza, New York (20), N.Y. The additional releases follow:

"KNOW YOUR ALLY: BRITAIN"

(American produced. Made by the Special Services Division of the U. S. War Dept.)

First in a series describing the members of the United Nations. It tells of Britain's factories, rationing, her part in Mutual Aid, drafting of men and women, life during the Blitz and her part in the battles of this War.

"THE BATTLE OF BRITAIN"

(American produced. Made by the Special Services Division of the U. S. War Dept.)

The authentic story of Britain during the tense period that followed the collapse of France, showing the first phase of Hitler's plan of attack in operation.

"MAN WOUNDED"

How surgery and nursing have been brought up to the front line in this war. The dispersal of casualties, and the methods adopted to restore patients to good health again.

"HIGHLAND DOCTOR"

A story of the famous Highlands and Islands Medical Service of Scotland. Indicates how modern technological developments make possible a higher quality of medical care for people in remote areas of Great Britain.

"TYNESIDE STORY"

What was done at a Tyneside shipyard, derelict as a result of the depression following the last war, to ensure the availability of personnel in order that much needed ships would soon slide down the ways again.

BIOLOGY

A series of nine films on Zoology, Embryology and Botany. Can only be secured on loan.

THE AMOEBA

Structure and function of a single-celled animal of very primitive type.

THE BLOWFLY

Life Cycle of the house-fly.

THE FROG

Its composition, by dissection study, and development to final form.

THE EARTHWORM

Detailed analysis of structure, growth and movement, and processes of coition, egg-laying and cocoon formation explained by moving diagrams.

THE DEVELOPMENT OF THE TROUT

Composition, fertilization and development of the eggs, and varied stages of development from hatching to final form.

THE SEA URCHIN

Development of the pluteus larva, feeding and growth, and process of metamorphosis.

THE DEVELOPMENT OF THE CHICK

Egg structure described by diagram,

with speeded-up photography showing embryo stages and development up to 7-8 months.

LIFE CYCLE OF A PLANT

Growth and structure of flower, mechanics of flower, cross pollination, germination, fertilization and development of seed pod.

HEREDITY IN MAN

Combining the use of charts and actuality, the law of differential fertility is described.

Technicolor Gains

Technicolor reported net income for the year ended Dec. 31 of \$1,103,704, equal to \$1.22 a share, compared with \$370,335 or 41 cents a share in 1942. Net sales for last year amounted to \$9,292,927, against \$5,797,281 in the previous year.

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Russia Is Making Seven War Films

SEVEN major films built around the war are now being produced in Russian studios, the Soviet Embassy announces.

"Moscow Skies" will be about the air defense of that city when the Germans were approaching it. "Ivan Nikulin, Russian Sailor," is being made in Technicolor and deals with a raid of German paratroopers on a Russian hospital train.

"Number 217" will be a drama on the sufferings of Russian girls driven into slavery in Germany. The life of a Russian population in a town under German occupancy will be the subject of "The Unvanquished." "The Mainland" is being made from a story dealing with Russian industry moved to the Ural Mountains from Leningrad, the Ukraine and Byelorussia.

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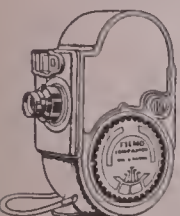
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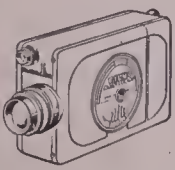
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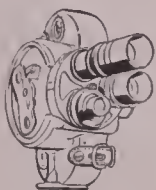
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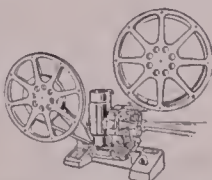
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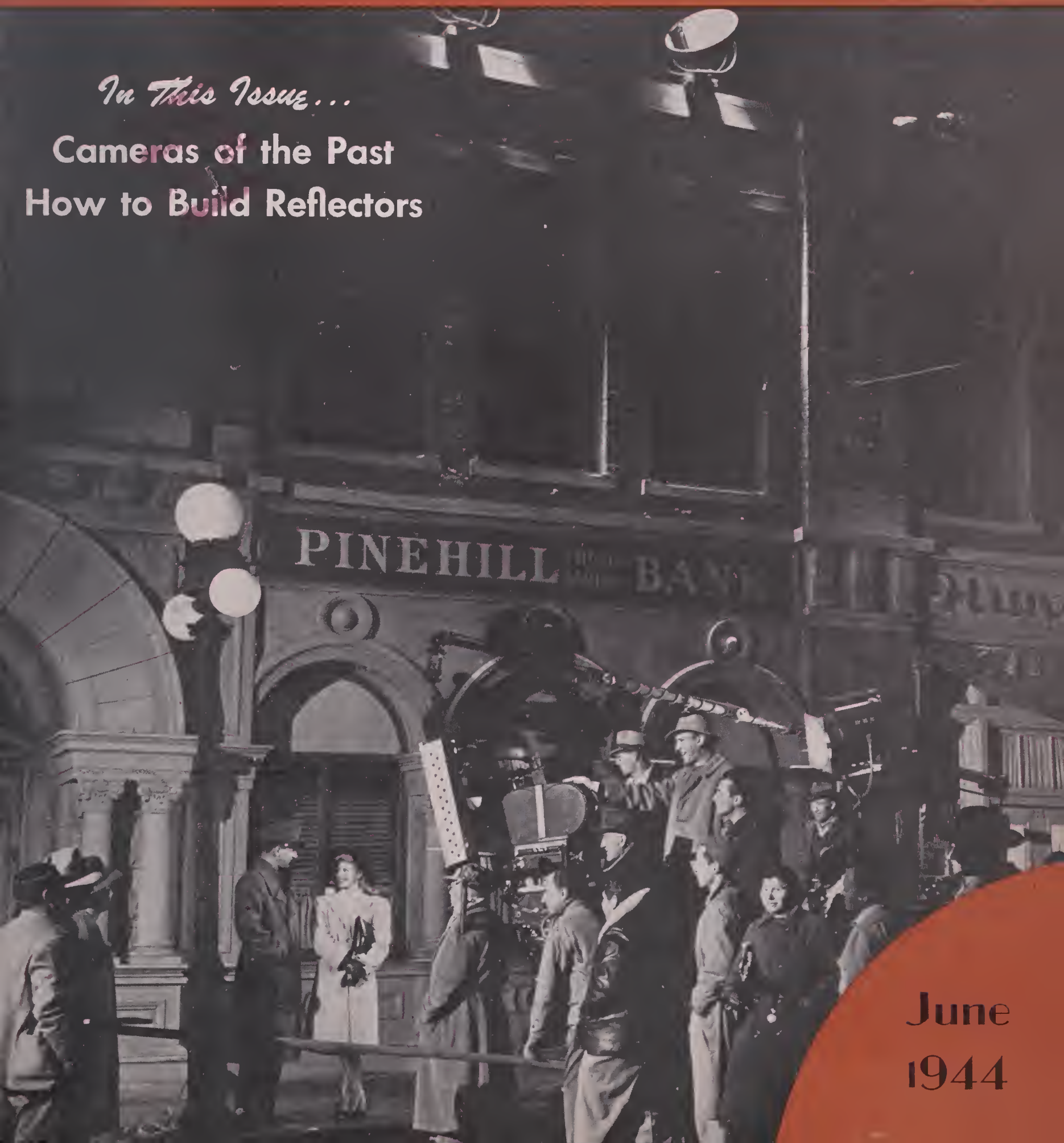
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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

JUNE, 1944

No. 6

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THE FRONT COVER SHOWS Director of Photography Tony Gaudio, A.S.C., lining up a shot for "Double Furlough" for Vanguard Films, Inc. This picture, produced by Dore Schary and directed by William Dieterle, has Ginger Rogers, Joseph Cotten, Shirley Temple in the cast.



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Left, President Leonard Smith of the American Society of Cinematographers. Above, Executive Vice-President and Treasurer Fred Jackman.

Smith Heads A.S.C. For Second Term

L EONARD SMITH was re-elected President of the American Society of Cinematographers at the Society's annual election last month. This will be his second term. Fred W. Jackman was re-elected Executive Vice-President for his second term, and also was named as Treasurer. Joseph Walker, Leon Shamroy and Charles Clarke were elected First, Second and Third Vice-Presidents, respectively. Byron Haskin was re-elected Secretary, and George Folsey was re-elected Sergeant-at-Arms.

The Board of Governors for this year consists of the above named officers and John Arnold, John W. Boyle, Arthur Edeson, Lee Garmes, Sol Polito, Ray Rennahan, John Seitz and Ralph Staub.

President Smith is a veteran of the industry, having started his camera work more than 30 years ago with the old Vitagraph company. During World War I he was a cinematographer in the Signal Corps of the U. S. Army, and spent 14

months in overseas duty. Much of that time he was at the front. Later he was attached to General Pershing's staff, and finally to President Wilson, in which latter post he filmed the signing of the Versailles Treaty. For the past seventeen years he has been on the camera staff of Metro-Goldwyn-Mayer Studios, where he has made an enviable record as a director of photography in both black-and-white and color.

In accepting the post of President for the second term, President Smith said, "I am extremely grateful to you men for re-electing me to this honored office for the second time, for by your action you have shown your faith in me as a leader. I promise you that I will not let you down. In the American Society of Cinematographers we have the greatest camera organization in the world, and I shall never stop working for its advancement."

Executive Vice-President Jackman in

accepting his re-election paid high tribute to President Smith and to the members of the Board of Governors who he stated "have worked hard and faithfully, and have supported the efforts we have put forth during the past year."

"I assure all you members", continued Jackman, "that we will continue to maintain this organization as an outstanding educational and social guild which will always be watching out for the interests and well-being of every member. For twenty-five years the American Society of Cinematographers has striven for the advancement of cinematography and cinematographers. It will continue to do so."

The officers were installed at a dinner meeting in the Society's club house. Present were many distinguished guests and members of the Society who are now in the armed forces. Among those who told of their experiences in the war zones were Major Elmer Dyer, A.S.C., just returned from the European war area; Major Frank Floyd, just returned from the Pacific area where he commanded a combat camera unit; Colonel William Keighly, Col. Paul Mantz and Lt.-Commander Al Gilks, A.S.C.

All were loud in their praise of the work the men in the combat camera units are doing on all fronts where they are shooting pictures on land and sea and in the air.

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Cameras of the Past

By IRVING BROWNING



Fig. 1



Fig. 2



Fig. 3

THIS being the Movies Golden Anniversary made me feel a keener sense of values for my old historical camera collection which I have been collecting for more than fifteen years. Now more than ever do I know that the human interest these cameras represent brings back to us that period in our life-time when we were young and thrilled by the bad man of the wild west, the siren, the slapstick comedy. They have played an important part in the changing of our time and customs. They planted the seeds from which this vast industry has grown. Today we rate high amongst the greatest of the world's industries.

Sometimes I'd like to believe that the old cameras I have would want to go home, if they could. WHERE WOULD THEY CALL HOME? Could it be the old Biograph studio in the brownstone on 11 East 14th street in New York, or the brownstone that housed both the Majestic and Reliance on Union Square, or the Imp studio on 11th Avenue and 43rd street, the Victor on West 43rd street, the Metro on West 61st street, the Edison in the Bronx, the Famous Players Lasky on 56th street, the Talmadge on East 48th street, the Pickford in a former skating rink on West 53rd street, the Jene Gauntier who turned a little church into a studio, or would they head west to Los Angeles and make home at the Bison, the Essanay, the 101 Ranch, the Kalem, the Selig, the Keystone, the Vitagraph? What surprises they would encounter, finding garages where some of the studios once were, apartment houses where others once proudly hailed, and on the west coast, the tremendous studios, the hustle bustle of yesteryear on a grandeur scale. The silent screen actor depended on the grinding noise of the camera to do his acting, but today,

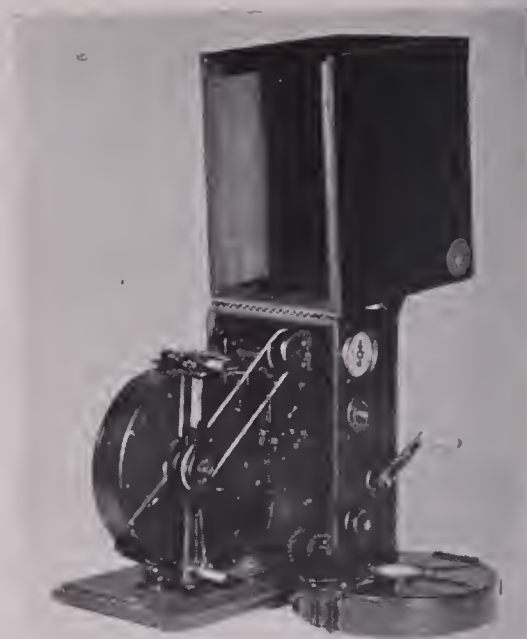


Fig. 5

the actor does his chores when all is quiet, and so the noisy cameras of yesteryear are no more part of today's production. Yet they have their place in the roster of the great of the past, as there is no doubt that they have carved their niche and are deserving of their place with the masters that have gone before them.

Having been a cameraman for many years, I always had a sentimental spot for the old timers, when I came upon one of them, and always bought it. I now own some thirty odd makes from four countries which made them as well as they produced films in competition with one another for the world markets. Amongst the cameras I own are the best makes of France, Germany, England and America. The American cameras finally triumphed and today are the best in the world.

I do not claim to have the very oldest of the cameras, for those are in the Smithsonian Institution in Washington and a representative group of fine pieces I have seen in The Franklin Institute in Philadelphia. There are but few private collectors yet they are, like myself, responsible for the present existence of



Fig. 4

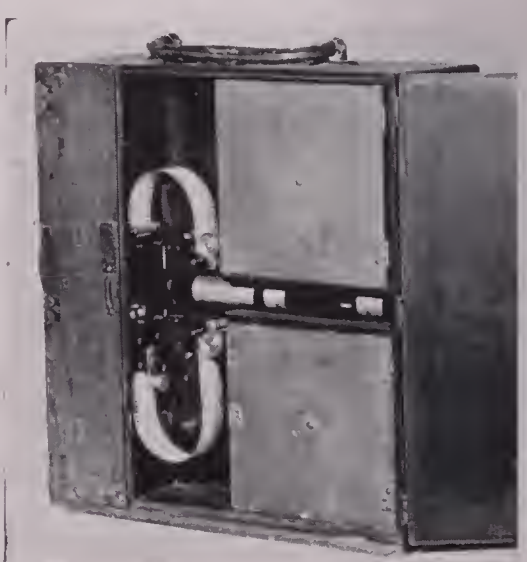


Fig. 7



Left, Fig. 6. Right, top to bottom, Figures 10, 11, 12, and 13. The author is shown in Fig. 6.

those pieces of equipment which will some day be seen in other Museums whose good fortune it will be to acquire them eventually.

Of the French cameras I own, I have two examples of the large box type, as in Fig. 1-2. The Pathe Studio Model with outside magazines as in Fig. 3. The Pathe field model used by the studios as well as the newsreels as in Fig. 4. The 28mm. commercial model as in Fig. 5. The Pathex 9½mm. is also in my collection. I also have the Debie Interview which was used mostly by newsreel cameramen.

Of the German cameras I own, I'm particularly interested in one which I have and which is a direct copy of the Pathe Studio Model. It is the Carl Geyer studio camera, with a few refinements on the Pathe such as the magazines side by side with forward and reverse belts all set for either type of shot. Fig. 6 shows the Carl Geyer on the left and the Pathe Studio on the right. I have the Erneman 200 foot camera and the 400 foot camera, Fig. 7, the 200-foot. Then I have a 200 foot Eberhardt Schneider camera, originally manufactured in Germany, Fig. 8.

Of the English cameras I have many. In those early days, many of the best cameras came from England and were used in many parts of the world. The English Prestwich was a most popular

old timer and made in many versions. The English standard roll of film was 300 feet in length and they made their cameras mostly standard for that length of roll, and the American standard was 200 and 400 feet rolls of film, and it was quite a while until the English camera came through with the 400 foot magazine. The standard Prestwich Fig. 9, is the 300 foot model. The Pittman Prestwich came later with its 400 foot magazines. I have the Gaumont Prestwich with a magazine on top and on the rear, Fig. 10. I have one Ensign 100 foot capacity, made with hand crank and for spooled film, same as used in the present Eyemo cameras, Fig. 11. I have the well known Moy camera. This Moy was the finest of the box type cameras and had the best precision mechanism of all the cameras of its type. It is of 300 foot capacity, and the one I own has been converted to a color process, subtractive process as the Kinemacolor process. This one is said to have been a new experimental Kinemacolor camera, Fig. 12.

Another most interesting specimen in my collection is the Aeroscope Camera, the invention of Mr. K. Proszynski, a Polish inventor who worked in England, as this camera was made in England. It

(Continued on Page 206)

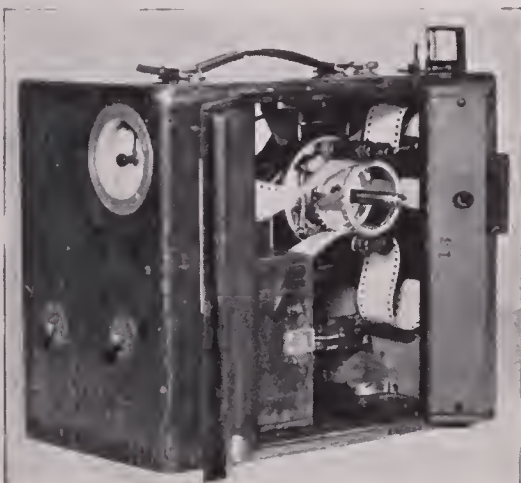
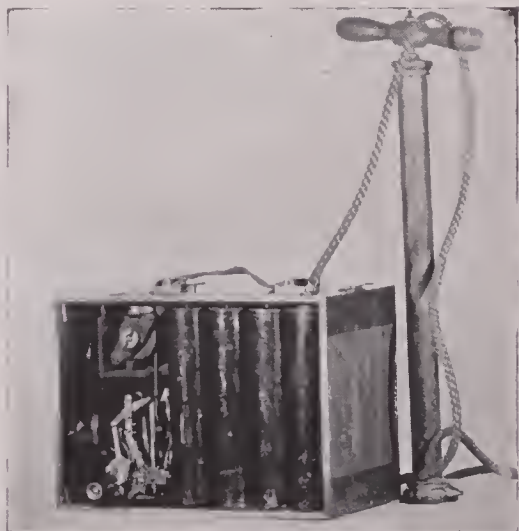
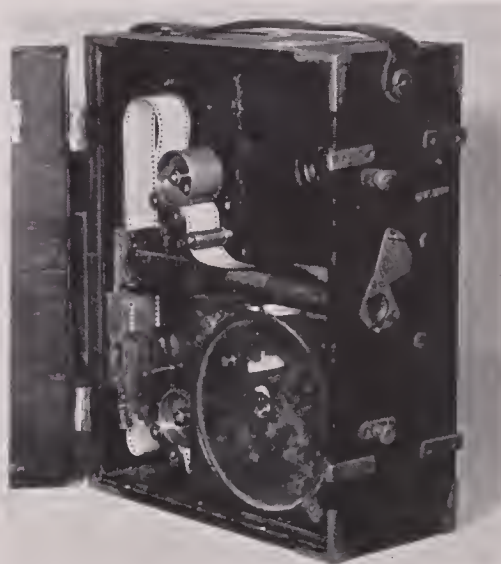
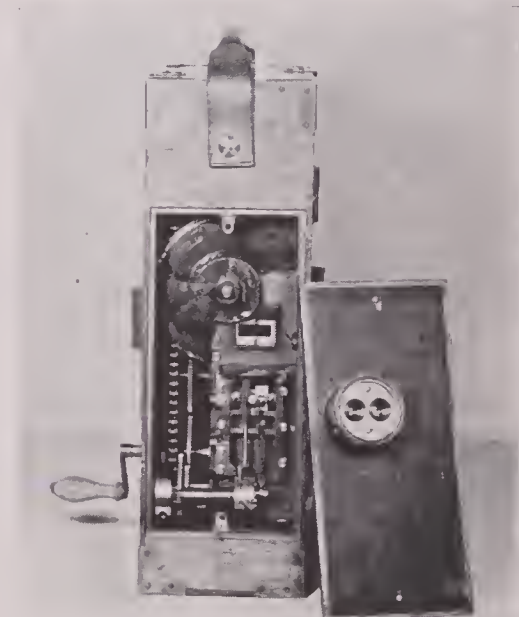


Fig. 8

Fig. 9



Aces Of The Camera

Harry Hallenberger, A.S.C.

By W. G. C. BOSCO

THERE is at least one member of the A.S.C. who has achieved his goal in life. And that's John Henry (Harry) Hallenberger. From his snug harbor at Laguna Beach, within a stone's throw of the Pacific, he can sally forth to fish whenever his heart desires. The frequency of his desires can be measured by the amount of fish in the diet of the Hallenbergers and their neighbors, who have practically never noticed the meat shortage. There is, we are told, a legend growing up in that haven of the artistic elite with regard to Harry's piscatorial prowess. But like all legends, including the one about the swallows of San Juan Capistrano, we have no personal knowledge and only report what we hear. In the interests of veracity, however, but without wishing to take sides in the heated discussions that are splitting into factions the previously harmonious and

tranquil society of that sea-girt paradise, we propose to tell both sides of the story. One side has it that Harry's consistently large catches of fish can only be accounted for by the fact that he has stumbled on, or invented a new, irresistible (to the fishes) lure. Having rifled his tacklebox at night in the interests of the sport, followed him at a respectful distance and peered at his activities from clefts in the rock, this group of contenders has come to the conclusion that Harry either, (1) promises the poor fish a screen test, or, (2) that he bares his shining cranium to the Sun and so dazzles the denizens of the deep that they leap right into the boat. The other side merely states that Harry stops at the fish shop on his way home. At last report the controversy promises to be settled amicably with both sides composing their differences in common agreement

that Harry, be he Laguna's premier fisherman or not, is certainly one of the country's best cinematographers, and an artist worthy of that city's Hall of Fame.

Perhaps Harry has been telling them some of his stories. Perhaps he told them how he was wafted into prominence way back in 1917 when he was assisting Charlie Rosher, who was photographing Mary Pickford in "Captain Kidd". It seems that it was Harry's first day on the set, and the first thing they found for him to do was to shoot a still of a kitchen. Harry was a bit nervous, of course, and he wasn't too sure what he had to do, but he did manage to get the camera set up on its tripod and lined up with the lens facing in the right direction. Having accomplished that much he went off in search of someone who might be able to tell him what to do next. But somewhere along the line he got side-tracked. He forgot all about the still camera 'until, about four hours later, someone called for a still on another set. Harry was sure his first day in the motion picture business was going to be his last, but hoping that no one would remember, he furtively withdrew the plate, and dashed off on his new assignment.

The next day he waited for the blow to fall. He wasn't a bit surprised when one of the big shots came in waving a print, and wanting to know who it was that took the still of the kitchen set. Of course Harry knew that he had taken it, but he didn't volunteer the information right away because he clung to the hope that someone else might speak up. And another thing, he had an awful time trying to control his Adam's apple, which kept bobbing up and down at an alarming rate. But finally, after what seemed an eternity of silence, he found the courage to admit that he had taken the picture. He was the man they were looking for. And he started for the door. "Well," said the big shot, "I want to tell all of you that this is the best still that has ever been made in this studio . . ." Harry sat down again, abruptly ". . . it's the best still I've ever seen . . ." Harry swallowed convulsively and decided then and there to say his prayers more frequently. ". . . it's perfectly exposed," the big shot continued enthusiastically, "and every detail is as sharp and clear as an etching. Some of you guys should find out how this new guy did it."

They should find out! If Harry only knew! It was some time later that he figured out that the prize-winning still of his had been the result of the natural light seeping in through the pin-hole in the shutter during the four hours the camera had stood unattended on the set. But at the time the incident only served to convince him that he had luck on his side even though he had a lot to learn about photography.

A few days later he had to change the film in a camera. For some reason the stuff gave him a lot of trouble. When the roll he was taking out of the camera fell on the floor he knew that that was definitely not the right procedure, but

(Continued on Page 208)

Television Picture Definition

By L. H. BEDFORD, O.B.E., M.A.

PICTURE definition, primarily from the television view-point, may conveniently be discussed in terms of the very well-known and somewhat abused television formula:

$$f = \frac{1}{2} \frac{1}{T} R n^2 \dots \dots \dots (1)$$

This formula purports to relate the required frequency band width f to the (net) number of scanning lines n , aspect ratio R , and Time T in which the net picture is scanned. It will be shown that only in one special case is the formula correct, and that in other cases the question which it is supposed to answer has no meaning. If one may borrow the Irish idiom, it may be added that if the question had any meaning the answer would be wrong.

The derivation of this so-called classical formula is extremely simple. It is argued that the highest vertical definition which a set of horizontal scanning lines can resolve is an alternate black and white distribution at half-pitch equal to the pitch of the scanning lines. Therefore we should be able to resolve a similar but no finer distribution in the horizontal direction. The number of complete periods per line is thus $\frac{1}{2} R n$ and the time for each line scan is $\frac{T}{n}$. Thus the fundamental frequency for this distribution is the quotient of these two qualities, whence formula (1).

The principal weakness of this argument was exposed in 1934 by Kell, Bedford and Trainer (Proc. I.R.E. Nov., 1934, pages 1246-1265). They pointed out that the vertical resolution was not in fact as high as it might appear, for although this distribution could be resolved when it happened to be exactly "in mesh" with the scanning lines, (Fig. 1 L.H.S.) if the raster were displayed vertically by half a line pitch, (Fig. 1 R.H.S.) the scanning lines would be reproduced uniformly at half brightness and a uniform grey field would result. In this case, therefore, the vertical resolution is completely lost.

Saturation Definition

Two possible deductions follow from this consideration. The first is that if this vertical distribution is *liable* to be rendered as a uniform grey, the pitch of the distribution should be so related to the acuity of vision that the eye would in any circumstances interpret it as nothing other than a uniform grey. In other words, given a proper figure for the acuity of vision, and a prescribed viewing angle, we are able to formulate a saturation value for the required num-

ber of lines. If this number of lines n_s is adopted then it can easily be seen that the formula:

$$f_s = \frac{1}{2} \frac{1}{T} R n_s^2 \dots \dots \dots (2)$$

gives the saturation frequency band, f_s .

In contrast to the kinematograph case, in which the technique of the subject is such as to allow more than saturation definition to be provided, in the television case economic if not technical considerations force us to work materially below this value. It is in these circumstances that the question "What is the required frequency band?" has no meaning. The fact is that, short of the frequency required to saturate the horizontal definition, which frequency is no longer given by equation (1), the definition improves as the frequency band is increased.

On the other hand, if we invert the question to: "Given an assigned frequency band f , what is the optimum number of scanning lines?" then an expression of the type of equation (1) gives the answer.

Kell, Bedford and Trainer introduced an empirical constant k_1 (less than 1) leading to:

$$f = \frac{1}{2} k_1 \frac{1}{T} R n^2 \dots \dots \dots (3)$$

This constant k_1 is introduced to allow for the fact that vertical definition is in fact not so high as the simple argument made it appear; and to obtain equal vertical and horizontal definition, we may reduce the latter. They give an empirical value of k_1 as 0.64.

Interlaced Scanning

All the above argument refers to scanning of the sequential type. The present author, in 1935, independently examined the problem for the case of interlaced scanning. In this case a new effect arises, namely, line stroboscopy, (not to be confused with inter-line flicker), which leads in effect to another loss of effective vertical definition. If one compares a uniform sequential raster at 50 cycles with an interlaced raster of the same number of lines at 25 cycles, and then determines the viewing angle at which the vertical brightness distribution is not resolved, one obtains the same answer for the two cases only so long as the eye is held absolutely stationary relatively to the interlaced raster. In the latter case, as soon as the eye is allowed to move stroboscopic displacement of the two interlaced half-rasters occurs, which leads to a superposition on the apparently uniform brightness of vertical distribution of period twice the pitch line. To reduce this effect to inoffensive

proportions it is necessary further to reduce the angle subtended by the line pitch by a factor k_2 empirically determined as $2/3$. (Had this factor worked out to be a $1/2$, this would have implied a zero advantage for the interlaced method of scanning.)

This factor has the same effect on the frequency formula as that of Kell, Bedford and Trainer; it must be noted, however, that the two factors must not be applied in cascade. The fact that the two constants k_1 and k_2 are so nearly equal is fortuitous. The difference is in fact less than the accuracy of determination of either, so that we may write a good approximation:

$$f_a = \frac{1}{3} \frac{1}{T} R n_o^2 \dots \dots \dots (4)$$

as relating the optimum number of scanning lines n_o , to an assigned frequency band f_a . This formula applies equally to sequential or interlaced scanning, but is subject to the condition that f_a is materially less than f_s .

In the above argument, the usual procedure has been followed of referring to definition in terms of the resolution of a black and white pattern of square waveform, and then considering only the fundamental sinusoidal component. Whether or not the exact wave-form of this test distribution is significant, it is certain that the apparent definition of a television picture is mostly determined by the sharpness of the transitions in a square wave-form of a much longer period.

Resolution Chart

With the object of bringing the resolution test into more direct relation with the television problem, a "Resolution Test Chart" of a somewhat unusual form has been prepared. In this chart a square-wave brightness distribution is compared (a) with its first harmonic component (i.e. the fundamental), and (b) with its first two harmonic components (i.e. fundamental and third harmonic). One may now determine the following viewing distances:

- d₁ The distance at which the horizontal distribution is unresolved in all cases.
- d₂ The distance at which the fundamental can be distinguished from the square-wave form.
- d₃ The distance at which the fundamental and third harmonic can be distinguished from the square-wave form.

If p is the linear full period of the distribution, then angles:

$a_1 = p/d_1$, $a_3 = p/3d_3$, and $a_5 = p/5d_5$ represent assessments of the acuity of vision based on fundamental, third and fifth harmonic resolution. In the earliest tests with this chart by a single observer a remarkable consistency between these assessments was obtained, but this was not borne out by subsequent tests with six observers selected at random. The spread of these results was in fact ex-

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Monopack Processes

By J. S. FRIEDMAN

THE trend in color processes at the present time is toward the use of monopack film. This is a multi-layered affair in which three emulsions are coated one on top of the other, and segregated from each other by filter layers. By a combination of filters and special sensitization of the individual emulsions, it becomes possible to achieve any desired type of color analysis, together with a physical separation of the three component units. These exist as monochrome dye images lying in layers one above the other, in exact registry. Ansco Color reversible film, Ansco Color negative film, Kodachrome, and Kodacolor are packs of this type.

Experience gained over a long period of time has taught us that for best color reproduction, color analysis should be made through a set of filters such as the A, B and C-5 Wratten filters. This is the procedure used by Technicolor in their successful reproduction process, and it is the standard to which monopack strives. An examination of spectrograms of the individual layer sensitivities indicates that up to exposure levels which encompass brightness ranges from 1 to 10, the quality of the separations achieved during the formation of the latent image corresponds very closely to the Technicolor standard. It is only when this range is exceeded that the green sensitive layer overlaps the others, but even here the degree of overlap is not too large.

We can therefore assume that the quality of the separations achieved during the formation of the latent image corresponds quite closely to the standard A, B and C-5 separations of the beam-splitting camera. Monopack film becomes, therefore, an ideal material for use in motion pictures, since it does away with the delicate and intricate one-shot camera, and relegates the precision work involved in the making of separations to the precision laboratory where it belongs. That the industry is well aware of this is indicated in the interest shown by Technicolor and the Army and Navy in monopack film.

An exposed monopack film must be processed in such a manner that each of the latent images in the 3 layers becomes converted into a readily differentiable form. The best way to do this, short of physically separating the 3 layers into 3 separate films, is to convert the image in the blue sensitive layer into a form that will modulate blue light and not any other—that is, into a yellow colored image. Similarly, the image in the green

sensitive layer must be converted into a magenta, and that in the red sensitive layer into a cyan. The procedure by which this is accomplished is the same in principle in Ansco Color reversible, Ansco Color negative, Kodachrome, and Kodacolor. They differ from each other only in details.

The underlying principle is the Fischer and Siegrist extension of the idea of "color development" previously proposed by Homolka. The extension is based upon the fact that the oxidation products of certain phenylene diamine and amino phenol developers, react with aromatic amino and hydroxy bodies, or with compounds which contain an active methine group, to form highly colored bodies. In general, cyan colors are obtained by the use of hydroxy bodies, yellows by the use of aceto-acetic ester derivatives, and magentas by the use of heterocyclic rings such as pyrazolone or substituted acetone-nitriles. This classification is only a very general one, for it is possible to obtain yellow oranges from some pyrazolones.

In Kodachrome processing, the exposed monopack is developed to form a silver image. The red sensitive layer is then completely fogged by means of red light, then developed with a phenylene diamine developer which contains a coupler such as ortho-phenylphenol. The net result is that together with the positive silver image there is formed an equivalent quantity of a cyan pigment. Since only the red sensitive grains have been reversed, the resultant dye image will be a record of the red densities as they were reflected from every point in the original scene. By analogous means, it is possible to reverse the green and blue layers individually, and in that way deposit a magenta dye image in the green sensitive layer, and a yellow dye image in the blue. After the three layers have been individually reversed, the metallic silver is removed by well-known means, leaving an image composed of three superimposed dyes.

The processing of the two Ansco Color materials and of Kodacolor differs from this materially. In these, the emulsion layers contain the couplers. Thus in the red sensitive layer there is present a body such as ortho-phenyl-phenol. This must be present in such a form that it will not wander from one layer to the next during the coating operations or during processing. The body must be immobilized. The Ansco Color materials differ from Kodacolor in the manner whereby this immobilization is achieved.

In Ansco Color the coupler is made nondiffusing by attaching to it a very

heavy group such as a resin acid residue, or a higher fatty acid residue. This is achieved without making the body insoluble, so that in an Ansco Color emulsion the coupler remains molecularly dispersed throughout each layer. This tends to give the dye image the grain structure of the reversed silver image, so that an Ansco Color image should not be any more grainy than the image of a reversed positive film. This is true not only for Ansco Color reversible film, but also for Ansco Color negative film.

The first is developed by reversal. The exposed film is developed in a black-and-white developer compounded to allow a later reversal. It is then exposed to white light and color developed with a solution containing a para-phenylenediamine developing agent. The same developer is used to convert all three layers into their respective colors, since the couplers are already present in each layer. Hence only a single operation suffices. The removal of the metallic silver, followed by fixation, completes the process.

Ansco Color negative development is even simpler. The film is merely developed in a phenylene-diamine solution, the resultant silver is removed by a silver bleach, and the film is finally fixed.

In Kodacolor the immobilization of the coupler is done in a different manner. The coupler is first dissolved in a water insoluble but water permeable resin, and it is then dispersed in a gelatin solution. The gelatin is finally mixed with the emulsion. The insolubility of the resin prevents its diffusion from one layer to the next. The water permeability allows free access of the oxidized developer to the coupling agent so that dye formation is not hindered. The thought arises that the dispersion of a water insoluble resin in gelatin would cause a loss of light and definition by light scatter. This would be true only if the index of refraction of the resin particles were materially different from that of gelatin. Evidently this is not so.

In the Kodachrome developing solution, the couplers are in molecular dispersion. In Ansco film the couplers are molecularly dispersed in the gelatin layers, therefore are in true solution. Thus in both cases dye formation takes place immediately adjacent to the developed silver grain. The grain structure in the final dye image is closely allied to that of the reversed silver image.

In Kodacolor the couplers are dispersed in the layers as discrete particles. The oxidized developer must diffuse from the locality of its formation until it reaches the resin particle. The grain distribution of the final image is related, therefore, to the distribution of the relatively coarse resin particles, rather than to the reversed silver image.

It would be expected that Kodacolor would be less suitable for extreme enlargements than Kodachrome or the Ansco Color materials. Kodacolor is

(Continued on Page 200)

Note: This article reprinted from S.M.P.E. Journal.



Cameramen Come Through

By ALVIN WYCKOFF, D.Sc., A.S.C.

AS THE Commanding officer of the First Motion Picture Unit, AAF, Culver City, California, Colonel Roy M. Jones, a photo-enthusiast, works with his men to attain a high standard of efficiency. The picture product finished at the Unit for training purposes, clears the way for men in training to learn more from a 10 or 20 minute film than they could gain from one instructor standing in front of a blackboard through several hours of explanatory lecture.

Of the many excellent training productions reviewed by this writer, two were vividly impressive: "Position Firing" and "Interrogation of Enemy Airmen."

"Position Firing" is a very instructive film that drew praises from the Chief of the Training Aids Division of the Army Air Forces. This is a training film done entirely in animation. It is designed to aid the novice in learning the whys and wherefores of aerial gunnery.

By use of a cartoon character, who by habit consults a crystal ball instead of the laws of mathematics and correct firing procedure, we see the reasons for missing an attacking enemy pursuit plane. The narrator points out common gunnery errors such as neglecting to compensate for deflection, and not taking the forward speed of the bomber into consideration.

The excellence of this diagramatic

picture lies in the power of the visual impression that constantly projects itself into the mind of the gunner the instant he aims at his target.

"Interrogation of Enemy Airmen" is a film of absorbing interest designed to facilitate the training of Air Interrogation Officers who act as Prisoners of War interrogators for the AAF. It points out that each prisoner of war is a potential mine of vital information; illustrates the type of background the student will have to acquire in order to be a good Air Interrogation Officer; demonstrates the various techniques of interrogation, both direct and indirect; details the differences in methods of interrogating prisoners of various nationalities and closes with the reminder that, since all prisoners have human weaknesses it is up to the AIO to discover them. It points out that a prisoner has only one defense, his silence, and that the advantage is always with the interrogator . . . but he has to know how to use his advantage.

Before the war, cameramen confined their efforts to photographic "capturing" by shooting with film, never killing but oft-times getting killed.

Little attention was given by the public that paid its admission to theaters all over the world to the trying efforts of cameramen as it watched the screening of thrilling events of the cameraman's product, nor did it think of the painful hours of risk, danger and suffering dis-



Upper left, Capt. Ellis W. Carter, former Pine-Thomas cameraman, awarded Air Medal and Presidential Unit Citation for work as an aerial combat cameraman. Top right, Major General J. W. Jones on inspection tour of AAF First Motion Picture Unit. Above, Major Frank Lloyd and Capt. E. E. Bergholz, former RKO cameraman, just back from duty in the South Pacific.

comforts he had had to contend with to give that audience a fleeting hour of thrilling entertainment. They were adventurous men thrilled with an adventurous calling to photograph, to get the picture was all that counted as they developed a sense that was devoid of danger.

Today, in the midst of the war the same public seldom gives thought of the cameraman as it gazes enraptured upon the scenes of furious battles as released by the War Department.

That fatal December 7th at Pearl Harbor laid a heavy load on cameramen as well as other technicians in other lines of duty. But, the War Department had to have pictures, good authentic pictures of every war activity in the quickest, the shortest, possible time. Cameramen and photographers were called and—they answered.

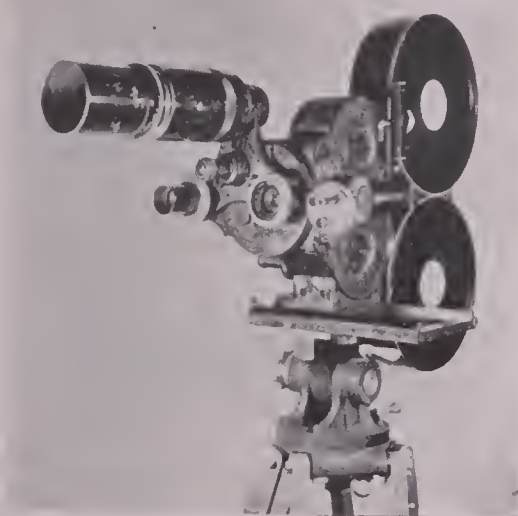
(Continued on Page 211)

Pola Screen and Filter Holders

By FRANK duPATY



Bell & Howell Eyemo 71C-A turret camera, showing magazine, motor and prismatic focusing magnifier.



Eyemo 71C-A turret camera without pola screen and filter holders.



Eyemo 71C-A showing pola screen and filter holders on 1" f.2, 2" f.2/5 and 6 1/4" f.3/5 lenses.

HAVING an Eyemo turret camera with several lenses of different speeds and focal lengths, and wanting to use one size pola screen and Wratten glass filters for all of the lenses, I found that an Eastman Series VIII was the correct size for the largest diameter lens.

For each lens I had made a slip-on filter holder, threaded to take a Series VIII filter retaining ring, so that I could use the Series VIII size polarizing filter and Wratten unmounted glass filters, separately or in combination, on the small or large diameter lenses.

On the 24mm. F.2 and 50mm. F.2.5 lenses I had the adapter or rather slip-on filter holder offset, so that it did not interfere with the view finder field.

On the 24mm. lens I had to be careful that the offset did not bring the edge of the retaining ring into the photographic lens field, also not to obstruct the view finder.

The 50mm. lens had more leeway and the longer focal length lenses did not present the offset difficulties of the short ones.

For an adjustable sunshade (not shown in the photographs) I used a slide form a 5 x 7 cut film holder, mounted on a rod with a universal joint and clamped on the camera.

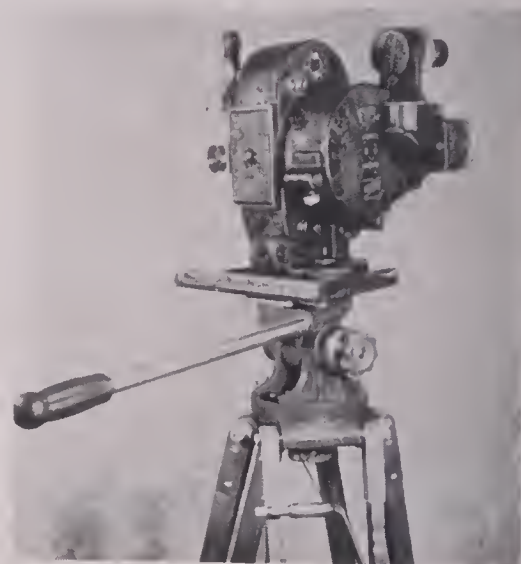
As stated above the idea was to use one size polarizing filter and Wratten unmounted glass filters for various diameter lenses and at the same time have an unobstructed view finder.

The above idea may also be applied to a Filmo 16mm. turret camera.

Another feature of this particular Eyemo turret camera was a removable prismatic focusing magnifier, which by merely releasing a catch it only takes a moment to slide out the magnifier and slide into its place a metal plate to protect the focusing ground glass. When the magnifier was removed a ratchet key could be used which remained on the camera, instead of the ratchet crank which had to be removed after each winding of the spring. Substituting a handle and strap for the alignment gauge, the camera reverted back to a flexible and convenient hand operated camera, less some bulk and weight. On the door of the camera was mounted a Leitz rangefinder, which was removable. Needless to say the magazine and electric motor were removed when using as a hand operated camera.



Eyemo turret showing side view of prismatic focusing magnifier.



Eyemo turret showing prismatic focusing magnifier, alignment gauge, Leitz range-finder.



Eyemo turret with prismatic focusing magnifier and alignment gauge removed, showing ground glass cover, ratchet winding key, handle and strap in place. The tripod was merely used to hold camera upright while being photographed.

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EASTMAN FILMS

How To Build Reflectors

By GLENN R. KERSHNER, A.S.C.

REFLECTORS are polished surfaces that reflect rays of light or heat.

In the motion picture business we use them to reflect the rays of sunlight in connection with photography. We have dealt with this in previous articles in this magazine.

During the past weeks so many inquiries have come from all parts of America asking how to construct these reflectors that this article will be devoted entirely to this subject.

In motion pictures a rule, for convenience sake, makes reflectors four feet by four feet so that we get two out of a four by eight foot piece of quarter-inch three-ply board. This size we generally set on the ground and prop them up with a piece of round stick similar to a broom handle. We taper both ends and drive in a spike, saw off the head and file it to a sharp point so that one end will stick into the back of the reflector and the other end into the ground, boards or into cracks in the cement. Reflectors placed on the ground are called *low reflectors*.

To prevent the three-ply board from warping or bending we nail strips of wood (A) around the edges on the back. They are approximately 1x1½ inches wide, surfaced four sides, and mitered at the corners. We then nail pieces of the same size both ways across

the center of the back. These prevent any bulging which would spoil a direct reflection from every square inch of the top side.

Around the edge of the top side, or shall we call it the face, we nail a striping three-eighths of an inch thick by one inch and a half, mitered at the corners and sanded smooth to prevent splinters while handling (B).

We now paint the edges and back to prevent weathering, but on the face we apply a couple of generous coats of shellac. When the last coat of shellac is still tacky, we very carefully lay small, very thin sheets of gold or silver foil (six by six inches square) and brush it smooth so that there will be no wrinkles whatsoever. We have learned a trick that is very helpful in eliminating too much glare. That is to leave about one inch of each sheet of foil standing straight up from the face (see illustration (C)).

For the reflectors that we raise high on standards we reduce the size somewhat (D). We find that the width is best at three feet, four inches by four feet long, but instead of nailing strips on both sides, we use a strip of pine 1¾ inches by 1¼. Into this we route a mortise ¼ inch wide and ¾ deep (E). Miter the ends so that when the three-ply is inserted into the mortise it will make a good solid frame. When satisfied that all fits firmly, glue it all together and nail with shingle nails. To make a better joining at the corners, dove-tailing is advised instead of the mitering.

This method of construction will give you a *face* on both sides. Gold foil one side and silver on the other, while the half inch of edging on both sides will protect the surfaces from rubbing together which might injure or rub off the foil.

In order that a reflector can be raised high and placed at the proper slant, as well as to be able to turn it over very quickly to use the other side, a bridle is fastened half way up each side (F), with a three-eighth bolt welded to it using a large winged nut. A drawing tells more than a thousand words could explain, so I will make a rough sketch of some of these parts, also a stand to hold the reflector which you can make very quickly with pipe joined by welding (G).

Now that we have talked of the gold and silver reflectors and the stand to hold them, I wish to explain that we have occasions when we may need a very bright reflection. Then we use a *lead reflector*. Instead of the gold or silver foil, we use lead that has been

DeVRY COMPETITION WINNERS ANNOUNCED

KEEN was the interest, and close the competition for War Bond Awards in DeVry Corporation's 1944 Motion Picture Camera & Projector Design Competition. Winners include several members of the armed forces, three Canadians, and an occupational variety typical of the universality of the growing interest in motion pictures as a hobby.

"Details of the prize winning designs and mechanical suggestions," explains DeVry President William C. DeVry, "must await V-Day and the resumption of civilian motion picture camera and projector manufacture. It can be said, however, that the designs, ideas and suggestions submitted indicate keen interest in and definite opinions regarding post-war's motion picture equipment, particularly in the amateur field."

To George J. Heim, of 3330 North 11th Street, Milwaukee, Wisconsin, went first prize for the best motion picture camera design. To Frederick Arthur Amster, of 3515 Bunker Hill Rd., Mt. Ranier, Md., went first prize for the top projector design. He is a machinist; Amster a motion picture animator.

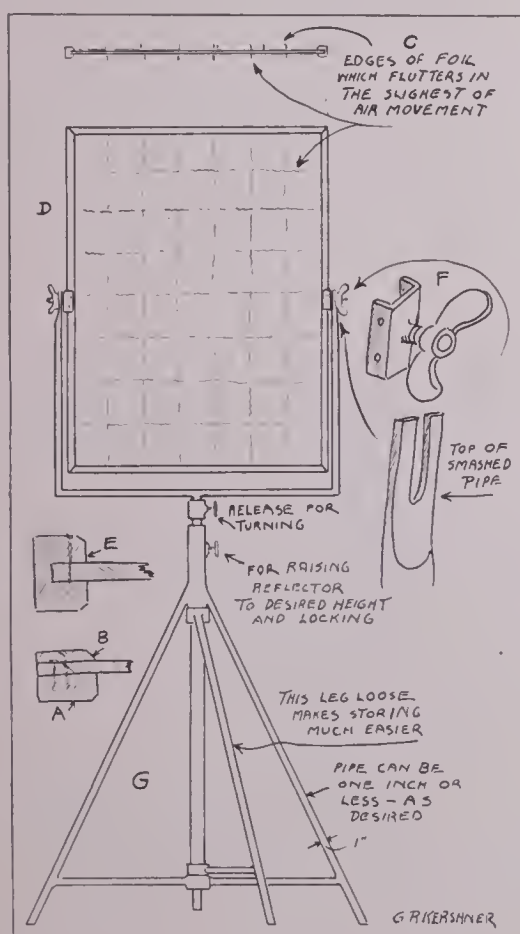
For camera design, Douglas G. Sites, of Havre de Grace, Md., a civilian gunner at the Aberdeen Proving Grounds, won second prize. To Robert C. Denny, 750 Vassar Avenue, Fresno, California, an electrical operating engineer, went third prize.

Second prize for projector design went to Jewell (Bud) J. Mulkey, of 1116 Third Street, Fairbury, Nebraska, a radio service man. Third prize for projector design went to Private Irving Krauss, whose home address is 1312 Sheridan Avenue, New York, N. Y., but whose present whereabouts is a military secret.

rolled very thin and burnished and can be purchased in rolls of various widths. You can polish this to a very brilliant surface, or what we call HOT.

On account of war shortages, gold and silver foil is very hard to secure but there are surfaces we can have, such as aluminum paint or flat white paint. Tin, and new five gallon oil cans cut up, do a very good job of reflection.

In closing I might say you do not have to stick to these dimensions. Make the reflectors to suit your needs. If you wish big reflectors and can not get them into your car, cut them in two and hinge them together so that they will fold up like a book, always bearing in mind to fold the reflecting surfaces inside for protection. Finally, do not forget that rain or any splashed water is likely to spoil the reflecting qualities.





A few sailboats on the water

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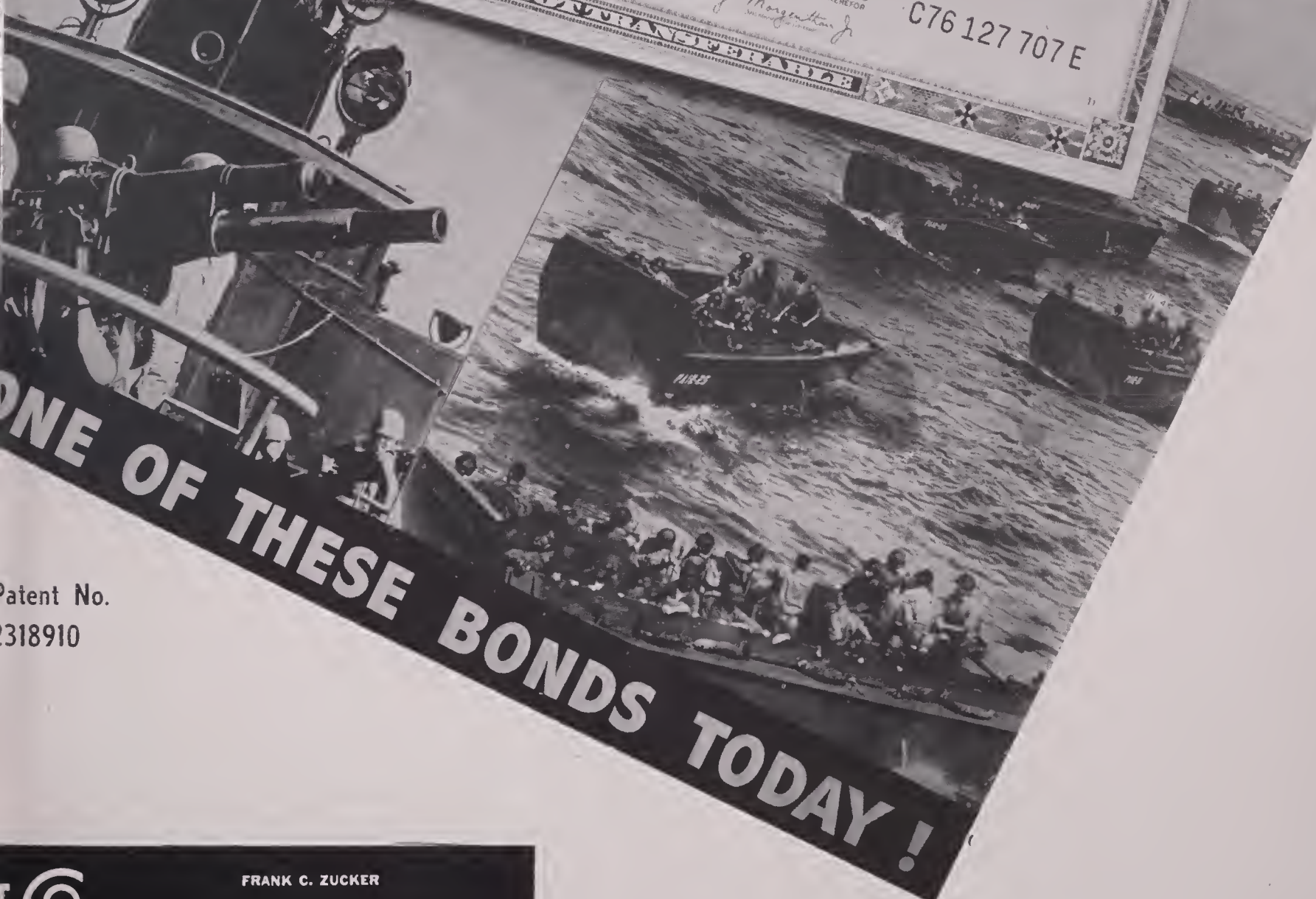
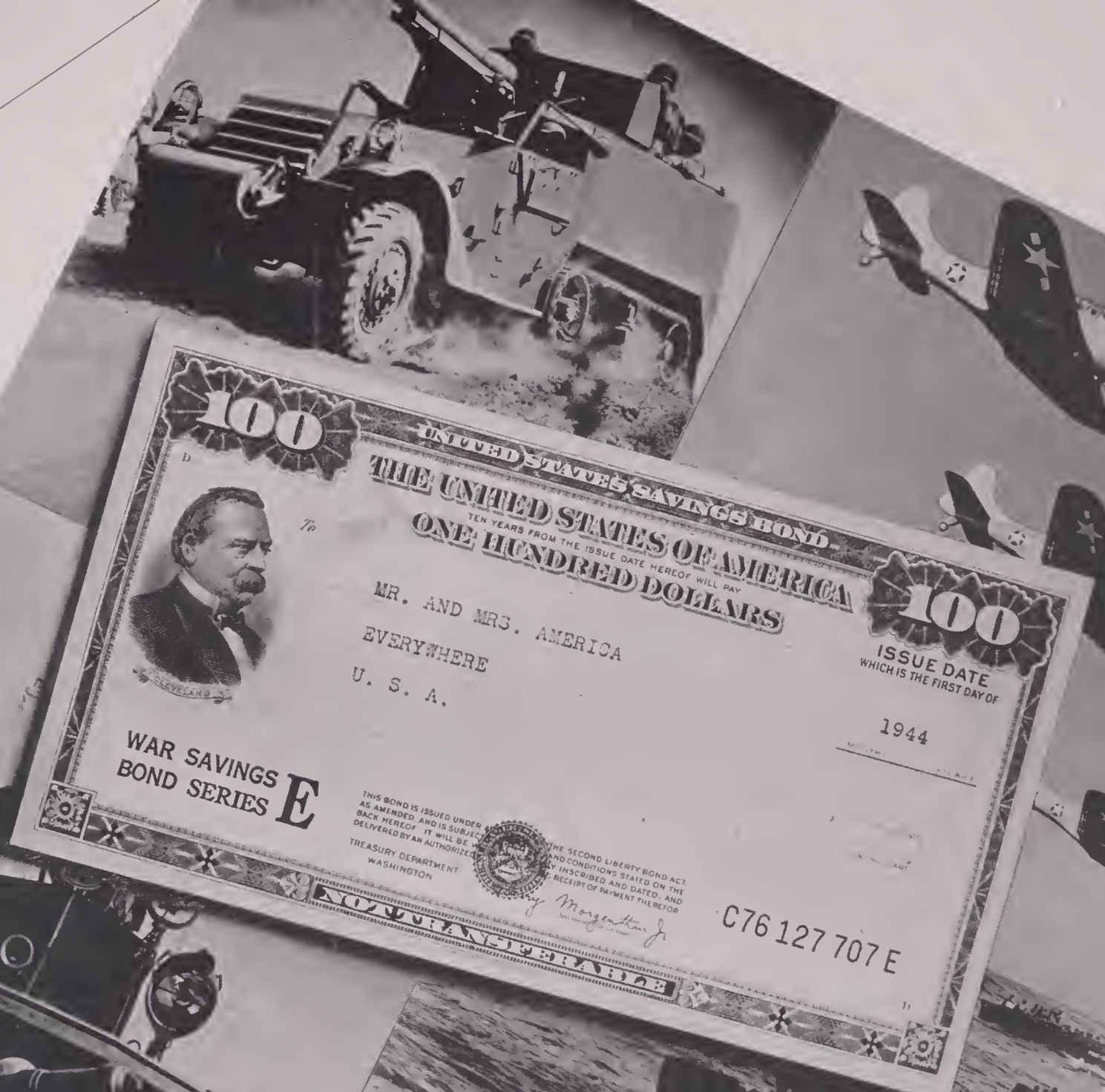
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 CAMERA EQUIPMENT



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Patent No.
318910

Monopack Processes

(Continued from Page 192)

processed exactly like Ansco Color negative. It is extremely simple, and there is no reason why such processing could not be carried out by the individual operator.

The exciting thing about monopack film is that it makes every black-and-white camera a color camera. It was pointed out above that the original exposure gave a color analysis that approached the standard obtained by a beam splitter. This approach is destroyed after the film is converted into a colored transparency, be that a positive or a negative. It is possible, however, to correct for the flaws introduced by the color processing. How this can be done is discussed by Prof. C. W. Miller in his book, *Principles of Photographic Reproduction*. He uses a rather elegant mathematical method which gives promise of great utility in the science of color reproduction in general. The present writer discussed the problem from a straight-forward photographic angle in his *Color Photography* columns in *American Photography*.

Following Prof. Miller, we will designate a color in terms of its ability to absorb the red, green, and blue primary. We can therefore write 3 equations to represent the cyan, magenta, and yellow colors used in the reproduction process, thus:

$$c = a_{11}r + a_{12}g + a_{13}b \quad (1)$$

$$m = a_{21}r + a_{22}g + a_{23}b \quad (2)$$

$$y = a_{31}r + a_{32}g + a_{33}b \quad (3)$$

Here c, m, y, r, g, and b represent cyan, magenta, yellow, red, green, and blue, respectively. The first equation states that the cyan dye absorbs the red light sufficiently to yield a density of a_{11} , the green light sufficiently to give a density of a_{12} , and the blue light sufficiently to yield a density of a_{13} . The set of three equations gives rise to a matrix which we call the color matrix,

$$(a) = \begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix} \quad (4)$$

The ideal cyan dye is one which will absorb the red light to the extent to which the dye is present at any point, but which will not absorb any green or blue light. In terms of the elements of the matrix above, this means that the numerical value for the constant a_{11} should be something greater than zero, but for the constants a_{12} and a_{13} the value should be zero. The more removed the values are from zero, the poorer the cyan dye from the point of view of color reproduction processes. Similar situations hold for the magenta and yellow dyes, but now it is the constants a_{22} and a_{33} which must have values greater than zero and constants a_{21} , a_{23} , a_{31} , and a_{32} which must have values of zero. Thus an ideal set of dyes would give rise to a matrix which would have values of zero for all of its nondiagonal terms, and constants for the diagonal terms. Needless to say such dyes are un-

known. That is why color distortion and degradation takes place whenever color reproduction is attempted.

Consider a color transparency which contains beside the image of interest, also an image of standard color. This can very well be a gray of density 1.00, a color which reflects or transmits only 10 per cent of the red, green, and blue primaries. The color can be represented by the equation

$$1.00r + 1.00g + 1.00b \quad (5)$$

where r, g, and b represent red, green and blue. In all color processes, the attempt is made to image a gray scale correctly. This means that a gray of density 1.00 will be reproduced as a gray of density 1.00. Suppose it requires a cyan dye concentration of x, a magenta dye concentration of y, and a yellow dye concentration of z to yield a gray of density 1.00 through each of the three separation filters. Then we must have

$$xa_{11} + ya_{21} + za_{31} = 1.00 \quad (6)$$

$$xa_{12} + ya_{22} + za_{32} = 1.00 \quad (7)$$

$$xa_{13} + ya_{23} + za_{33} = 1.00 \quad (8)$$

The elementary principles of algebra tell us that x, y, and z can have but one value which will satisfy the 3 equations. Therefore the problem of choosing emulsions which will correctly image a gray scale is a solvable one. We choose our emulsions so that upon equal exposure and identical processing, the cyan, magenta, and yellow dyes will be present in the ratios x:y:z.

The problem which we have set for ourselves is to determine the conditions under which separations from a color transparency will approximate those of a one-shot camera. We have pointed out above that each dye image is a close approach to the image of one primary color as it is present in the original. Thus if we can copy each of these without any interferences from the others, our object is achieved. To do this we must know the densities each of the 3 dye images present to the separation filters, when they are present in an amount necessary to yield a gray of density 1.00. This is not an impossible photographic problem, so we can assume it to be known. Let us suppose that the following equations represent the data:

$$c = x_{11}r + x_{12}g + x_{13}b \quad (9)$$

$$m = x_{21}r + x_{22}g + x_{23}b \quad (10)$$

$$y = x_{31}r + x_{32}g + x_{33}b \quad (11)$$

When we pass the light transmitted by the red filter through the cyan layer, the beam will be modulated. The original beam had a cross section every point of which had the same intensity. After passage through the cyan layer of the transparency the cross section was no longer uniform in intensity, but the intensities varied from point to point in accordance to the pattern imposed by the cyan dye image. This we define as *modulation*.

When the light passes through the magenta layer, it will again be modulated, although to a much smaller extent, since the value for the constant x_{21} is, as a rule, much smaller than the value for x_{11} . Hence upon the other pattern, there

will be superimposed the pattern of the magenta layer. To the extent to which modulation takes place during the passage of the red light through the magenta and yellow layers, color distortion takes place.

If we concentrate our attention again upon our standard color patch, the gray with a density of 1.00, we know that we want our copy to image a red density of 1.00. This means that we want our red separation to copy the cyan layer at this point of the transparency in such a manner that upon printing it will yield a density of 1.00.

The cyan image at this point has a density of x_{11} . Upon passage through all three layers, the density actually copied will be $x_{11} + x_{21} + x_{31} = 1.00$. Therefore we must do something which will convert the sum $x_{11} + x_{21} + x_{31}$ into x_{11} . The procedure which accomplishes this is termed masking, photographic addition and subtraction. Addition is achieved by registering a positive image with a positive, and subtraction is achieved by registering a negative with a positive.

In our case subtraction is called for. We must subtract from the color transparency the values $x_{21} + x_{31}$, where x_{21} represents a negative of the magenta layer, and x_{31} a negative of the yellow layer. A simple way to do this is to make two exposures upon the same emulsion, one with green light to copy the magenta layer, the other with blue light to copy the yellow. The exposures are of such duration that the ratio of the green latent image to that of the blue will be $x_{21} : x_{31}$. The mask is then developed to a gamma which is equal to $x_{21} + x_{31}$. This constitutes the mask for the red filter separation. The masked transparency will have completely neutralized the densities x_{21} and x_{31} in the magenta and cyan layers, so that they will no longer modulate the red light imagewise. Only the densities in the cyan layer will give such modulation, and at the point where our present interest lies, this modulation will be a measure of the term value x_{11} . In a similar manner we can make masks which will serve for the other two separations.

In the case of the red and blue separations, this double exposure is not necessary. The curves for the magenta and the cyan dyes intersect in the regions of their high absorptions. Let us suppose that they intersect at the point corresponding to a wave length of $590 \text{ m}\mu$. This means that light of this wave length is absorbed by the two layers in equal quantities. To the right of this, more light is absorbed by the cyan image, and to the left more light is absorbed by the magenta. Thus by a proper choice of monochromatic light we can vary the ratio of the cyan to magenta images in any desired proportions. We desire a ratio of cyan to magenta that is equal to $x_{13} : x_{23}$. The yellow and magenta curves intersect somewhere in the neigh-

(Continued on Page 210)

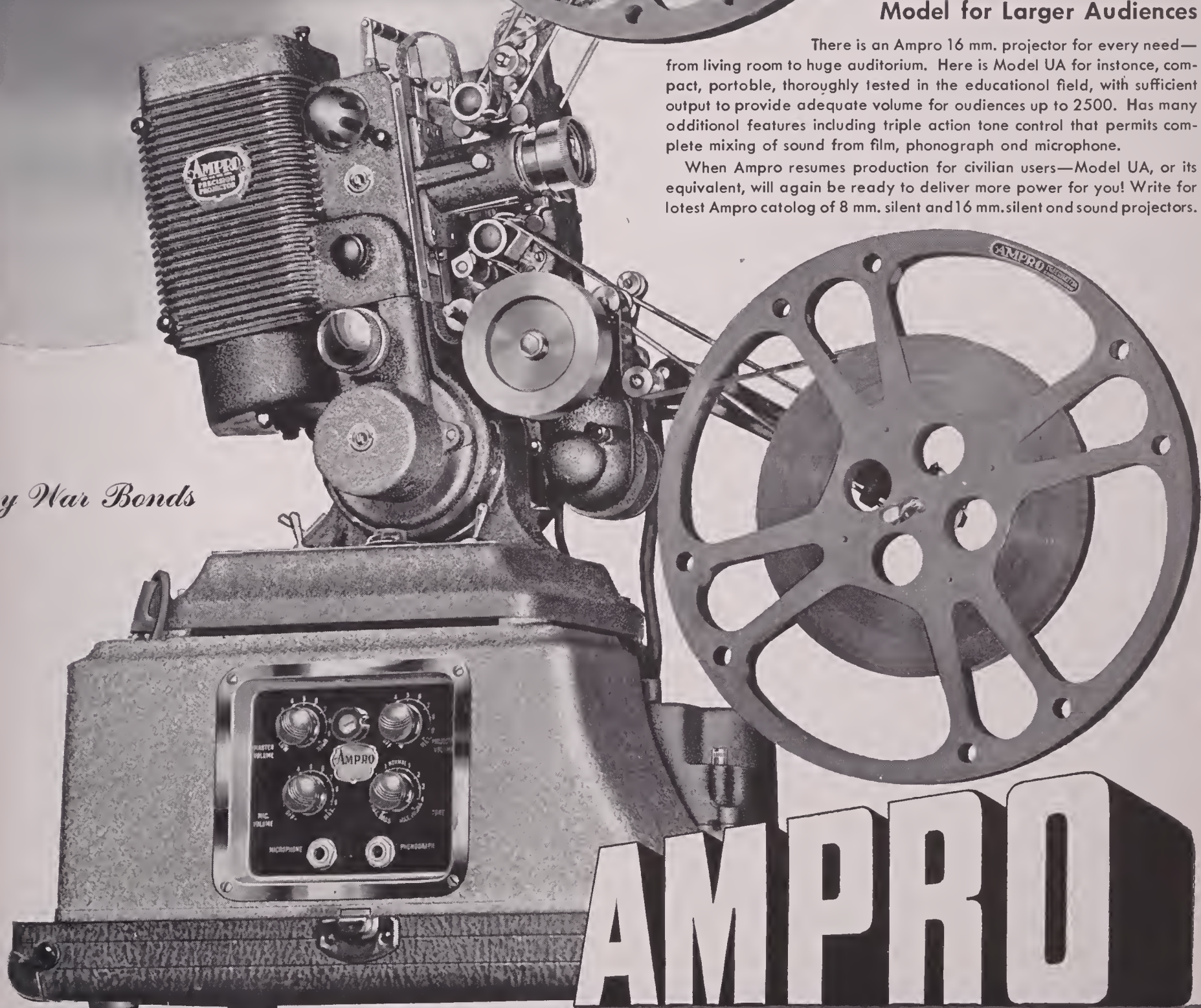
More Power for You

Another Amprosound Model for Larger Audiences

There is an Ampro 16 mm. projector for every need—from living room to huge auditorium. Here is Model UA for instance, compact, portable, thoroughly tested in the educational field, with sufficient output to provide adequate volume for audiences up to 2500. Has many additional features including triple action tone control that permits complete mixing of sound from film, phonograph and microphone.

When Ampro resumes production for civilian users—Model UA, or its equivalent, will again be ready to deliver more power for you! Write for latest Ampro catalog of 8 mm. silent and 16 mm. silent and sound projectors.

Buy War Bonds



THROUGH the EDITOR'S FINDER

A FEW months ago we asked our readers to tell us what articles they would like to see in the Cinematographer. A few vague letters resulted. So, again we asked you to tell us what you want. But will you please be as explicit as possible. Give us specific problems you want us to write about. Give us concrete ideas, and we will do our best to deliver the goods.

IN THE March issue of this magazine we printed an article by Le Roy G. Phelps, of the Princeton Film Center, about how he "Akeleyized His Cine Special." It was an extremely interesting story, and we suggested at that time we would like to hear from other readers who have done "home-made" jobs on their equipment.

In this issue we have another by Frank du Paty.

We hope this will inspire more readers to send us their experiences. We will gladly print them, and from reader reaction, we know the readers of the magazine will be happy to read them. So, come on now and let's hear what more you camera enthusiasts have done to improve your equipment.

IN the May issue of the CINEMATOGRAPHER we printed an article about Thomascolor, written by Alvin Wyckoff, describing its appearance on the screen and explaining in a general way how it works. This article was printed because it is the policy of the magazine to bring to its readers all developments in the photographic field—in other words to keep abreast of the times.

Unfortunately, from some sources has come the inference that the American Cinematographer and the American Society of Cinematographers, by the printing of this article, was recommending Thomascolor; in other words was "giving it the green light". It has also been suggested that Thomascolor is commercially "impractical" because a special projection lens has to be used to project it on the screen. Mr. Wyckoff explained that special lenses had to be used.

Actually, Mr. Wyckoff's article was a job of news reporting, and not an attempt to "sell" the color system. The American Cinematographer never endorses any product, except War Bonds; neither does the American Society of Cinematographers. Therefore in printing the news article about Thomascolor neither the magazine nor the Society were endorsing it. The magazine simply printed the observations of the author, who is not connected with Thomascolor, and who was paid for his article by this magazine.

In Memoriam

IT IS with extreme regret that we report the death of Lt. Comdr. Harold L. "Winnie" Wenstrom, U. S. Navy, for many years one of the most prominent members of the American Society of Cinematographers.

"Winnie" was one of the most popular members of the society, and had long been rated one of the top flight directors of photography in Hollywood. He started his career with the old Metro Company in New York in 1914. In 1924 he joined the photographic staff of Metro-Goldwyn-Mayer Studios in Hollywood, and remained there until America entered the present war when he joined the Navy. He spent considerable time at one of the combat areas where he contracted pneumonia. Weakened from illness, he died in Washington shortly after returning from active photographic duty at the front.

In his passing the American Society of Cinematographers lost a beloved member and the motion picture industry lost one of its finest cameramen.

WHENEVER funds are needed for a worthy cause members of the motion picture industry are never found wanting. And in this year's Red Cross Drive members of every branch of the film industry in Hollywood have again come through in a magnificent manner.

A total of 22,715 individual donations were made by Hollywood players, writers, directors, producers, talent agents, cinematographers, film editors, sound technicians, musicians, grips, electricians and other workers for a total of \$644,557.35 for the Red Cross "Invasion Year" appeal.

This is truly a fine gesture—more than half a million dollars to help care for our boys in the service. But this is only a small part of what the men and women of the film industry are doing in this war. They have played a big part in putting across the big bond drives, they are sending entertainment to the troops in all parts of this continent, and scores of players are going right to the battlefield to carry entertainment where it is most needed. Here and there we find a member of the film industry whose actions make unpleasant headlines in the newspapers, but as a whole Hollywood people are honest-to-God folks who are in there pitching with all they have, and never turning a deaf ear to the needy.

IN NO previous war have cameramen, both motion picture and still photographers, played such a prominent part as in the present world conflict. No matter where the fighting front, there are cameramen alongside our fighting men making a lasting pictorial record of the event.

While we read much about the deeds of our aircraft pilots and their gunners and bombardiers, most of us fail to realize that in many of those aircraft are cameramen shooting pictures instead of bullets. On the ground, plodding along with the foot soldiers are other cameramen. When the war is over perhaps the cameramen will receive a little of the praise that they so justly deserve, and which they do not get in the excitement of humans slaughtering humans.

ALTHOUGH most of us are still staggering under the blow of tax payments recently made, we hope that every reader of this magazine not only is continuing to buy war bonds as in the past, but are increasing their investments in these bonds that are so vital to the winning of the war.

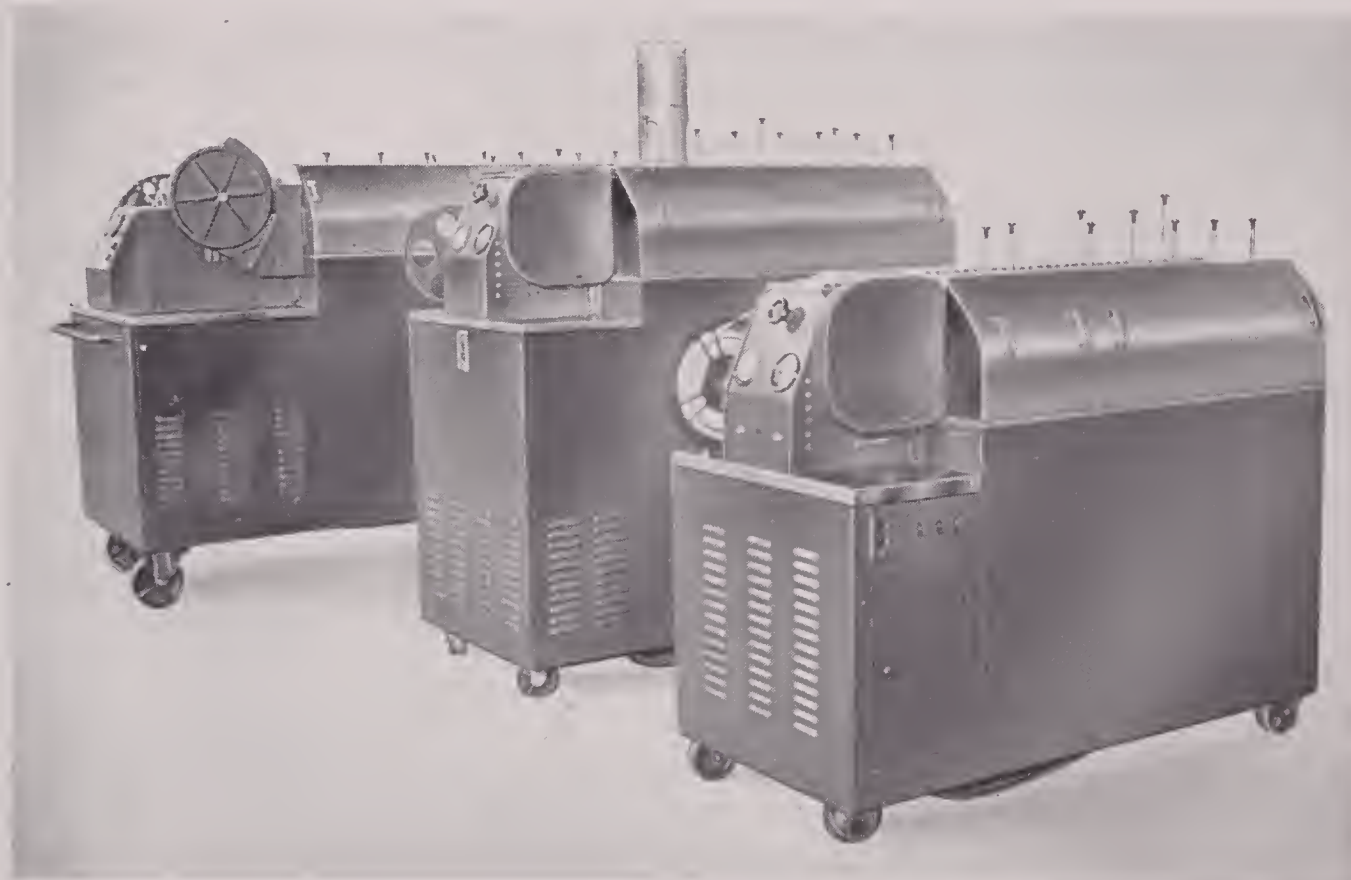
With the invasion of Europe just around the corner, and with the tempo of the war against the Japs constantly increasing, more and more vital supplies are going to be necessary. This means more bond buying. It may mean sacrifice on the part of civilians. If it does, so what! Millions of our boys are not only sacrificing their jobs, but are giving their lives, their legs, their arms, their sight to help free a world from the ideas of a mad man and a race of squint-eyed murderers. Let's all buy more bonds and hasten the victory.



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Three Houston machines, each designed for a specific job.

In the illustration above, the machines were needed for a variety of uses.

One organization wanted reversal 16mm processing equipment of high capacity. Their choice, the machine on the left.

Another organization needed negative developing only. They selected the middle machine.

A third group wanted a machine for reversal, negative developing, and positive developing—high capacity not required—their needs completely satisfied with the machine above pictured on the right.

A fourth group required a 16mm negative and positive developer, editing and printing equipment, dark room for loading and printing, and fully portable. See our August advertisement for details.



FROM CAMERA TO SCREEN — HOUSTON

Motion Picture Studio and Laboratory Equipment — Developing Machines — Printers — Camera Cranes and Dollies
Miniatures — Mechanical Sets — Engineering and Design Work — General Machine and Jobbing Work

AMONG THE MOVIE CLUBS

Washington Society

"The Army Goes Over", a film of the first World War, highlighted the May meeting of the Washington Society of Amateur Cinematographers. Also on the program were scenes made by C. M. Wilcox in the Amazon area, and some excellent pictures of Florida by Ralph Griggs.

Southern Cinema Club

Members of the Southern Cinema Club turned their May 1st meeting into an enjoyable picnic. They met at the mountain cabin of Dr. Norman Jarvis at Carbon Canyon. Everybody brought his own lunch, and the club furnished the coffee.

L.A. 8mm. Club

Six monthly contest films were shown and graded by the judges at the May meeting of the Los Angeles 8mm. Club. The films and grades were:

"Coming Events" by C. G. Cornell, 295 points.

"Aquarium" by Mr. Boaz, 262 points.

"At the Lake" by Mr. McEvers, 261 points.

"Around the Town" by Mr. Dietz, 242 points.

"Horse Show" by Mr. Boaz, 241 points.

"Hawaii and the Marshal Islands", by Wm. Reed, 240 points.

Brooklyn Club

Meeting nights for the Brooklyn Amateur Cine Club have been switched to the first and third Wednesdays of each month. Films shown at the May 3rd meeting included "Churches on Parade" and the fourth in the series of making better movies by Kenneth Space, namely, "Film Editing".

On May 17th, guest night, the following were screened: "Lend Me Your Ear", "Pointless Foray", "Flowers of the South", "Summer Rhapsody" and "Junior Does His Bit".

Minneapolis Movie Party

The seventh annual movie party given by the Minneapolis Cine Club on May fifth presented a program that members and guests will long talk about. This is the film bill of fare that was presented: "Minneapolis From the Air", "Pulpwood Goes to War", "Our Daily Bread", "Birth of a Blossom", "Juvenile Expressions", "Pals", "Mexican Memoirs", "Food for Freedom", "A Mediterranean Cruise", "First Aid vs. Worst Aid", "Majestic Mexico" and "The Inside Story". And all this in Kodachrome.

Chicago Camera Club Salon

Forced by conditions to suspend its annual salons for several years, the Chicago Camera Club now announces another open exhibition, to be designated as the Chicago Camera Club Salon for 1944. The exhibit will be held from November 6 to December 9. An effort will be made to secure entries from foreign countries, despite war conditions.

Utah Cine Arts Club

Screening of three films, and a splicing demonstration featured the May meeting of the Utah Cine Arts Club. The films were, "The Birthday of a King" by Pete Larsen; "Moon Over Sun Valley" and a "Clinic Film". Kermit Fullmer gave the splicing demonstration, and E. L. Lamar spoke on sound reproduction.

La Casa Club

Five films made up the film fare of the May meeting of the La Casa Movie Club of Alhambra, California. As an added attraction, R. A. Battles gave an interesting descriptive demonstration on gadgets.

The films screened were "Southern California Scenes" by W. R. Wyatt, "Monument Valley" by D. A. Powell, "Sierra Sojourners" by R. A. Battles, "South of the Border", a Walt Disney film, and "Laguna Beach and San Juan Capistrano" by Edward Harmon.

M.M.P.C.

James W. Moore, continuity editor of Movie Makers Magazine, was special guest of the Metropolitan Motion Picture Club at its May meeting. Four films were screened. They were "Shadow Bones" by Frank Gunnell, "Horse and Buggy Days" by Charles J. Ross, "Dear Boys" by C. M. DeBevoise, and "Ice Follies—1944" by Emerson Conklin.

New members announced by the club secretary are Norriss Harkness, Lt. Paul E. Kohler, Jr., USNR, Joseph E. Kovar, J. E. Prisk, J. C. Smith.

Philadelphia Cinema Club

A charming film, "Springtime in Charleston" by B. T. Barnard headed the program of the May meeting of the Philadelphia Cinema Club. The film, in Kodachrome, takes you on a delightful trip through the famous Middleton, Magnolia and Cypress Gardens, as well as the old quarter of Charleston. Beauty in every scene with appropriate music and narrative.

Two other films were also shown. They were "Tamarack Trails" and "Sahuaro Land".

Congratulations, Syracuse!

Last month, the Syracuse Movie Makers started a new phase of trying to help in the present war effort. Previously they have taken films of various types and put on shows for the service men in the different barracks in and around Syracuse. Recently, most of these barracks were either put on a "stand by" basis or closed all together. Consequently, at the request of Capt. Donald Sanford, M. D., and head of the 52nd General Hospital Unit in England, (Dr. Sanford is a member of our club), they are taking pictures of the families of this unit from Syracuse and sending these pictures to their husbands overseas. It seems that although most of the wives of the Unit's members have 8mm. projectors, and cameras, there are no 8mm. projectors in England—at least not in the sector that the Unit is located in. Therefore, in as much as the Unit has a 16mm. projector available, they are taking about from 50 to 100 feet of either B.&W. or Kodachrome film of each family in their homes and after processing, editing, and titling are sending them overseas in 100 foot reels for their husbands to see.

"The plan is simple," says Lisle Conway, 'in case other clubs might like to copy it. We furnish four men; a cameraman, a man on the lights, a man to read the meter and check the focus, and another as an extra to help move furniture and act as a grip. These men, the cameras and lights are furnished free in the city. Also transportation in the city is furnished by the club. For those families outside the city, we furnish the cost of the gas and the family furnishes the gas coupons necessary to get there and back. If the family has film available in 16mm., they furnish it, otherwise we obtain the film for them and they pay the cost price of it.

"Most generally the wives of the units will call us up on the phone and give us a series of dates that will be all right for us to take pictures on in their homes. We then select one of these dates so that we may cover two homes in one evening and also furnish a full crew conveniently for us. Last Wednesday, we went to Cazanovia (about 25 miles from the city) and made 100 feet of Dr. Sanford's family; his mother, wife, and 2½-year-old boy. In addition we covered another family of the unit in Cazanovia. This service is not limited to families of the club members, as there is only one club member in the entire Unit from Syracuse—and we plan to shoot all of them. We hope that by doing so we may help in some small way, the furtherance of the war effort."

STEADILY IMPROVED

THE PREFERENCE of cameramen and directors of photography for Eastman Films has a sound basis. In the face of wartime pressures, the exceptional quality of these films has been not merely maintained but steadily improved. Eastman Kodak Company, Rochester, N. Y.

J. E. BRULATOUR, INC., *Distributors*

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Chicago

Hollywood

EASTMAN FILMS

Cameras of the Past

(Continued from Page 189)

is the first automatic mechanical camera which ran by air compression. Illustration Fig. 13 shows the air chambers and little engine and a bicycle pump which was used to pump the air in the chambers. These chambers held 50 lbs. air compression. Fig. 14 shows the film side of the camera. This camera is no larger than the Pathe Inside magazine camera. Then I have a British made 200 foot camera for the local newsreel cameraman, with regular, single and reverse crank. This has no name plate, but I'm certain it is made in England, as in Fig. 15.

Of the American made cameras, my pet is the Phantoscope. I believe this one to be the commercial product made by Francis Jenkins who was one of our most promising exponents of the motion picture in its early stages. An original Jenkins 16 lens camera is in the Smithsonian Institute

in Washington along with most of his other original experiments. Fig. 16 shows the Phantoscope camera. Then I have what is said to be a Bingham Camera, a heavy weight 500 foot magazine capacity with a most peculiar mechanism. Mechanism moves down drawing film, then pair of pilot claws grab and hold for exposure and after exposure, claws release by which time mechanism is back up and ready to move down again with film. I have one 400 and one 500 foot magazine capacity camera of each of this one as in Fig. 17. Another pet of mine is the American made Ginett beater movement paper motion picture camera, made expressly for use in amusement parks, where you could get a strip of motion pictures on reversal photographic paper of yourself kissing your best girl, for only a quarter, as in Fig. 18.

I also have the Gillon and Eclair and Lubin cameras which I have since added to my collection but which I have never photographed. Fig. 19 is my collection as it was when this photo was made some time about 1935. In my collection I also have several old time rewinds, measuring machines, some film 35mm. in width, no perforations, but on it the first sound made by Mr. Eugene Lauste and some of the wide film motion pictures he made back in 1890. I have tripod heads of old vintage, and many other interesting pieces, as well as a fair collection of still cameras, a collection of which I took up as much as 11 years ago.



Fig. 14



Fig. 15

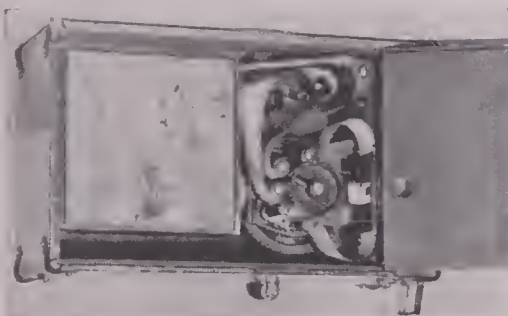


Fig. 16

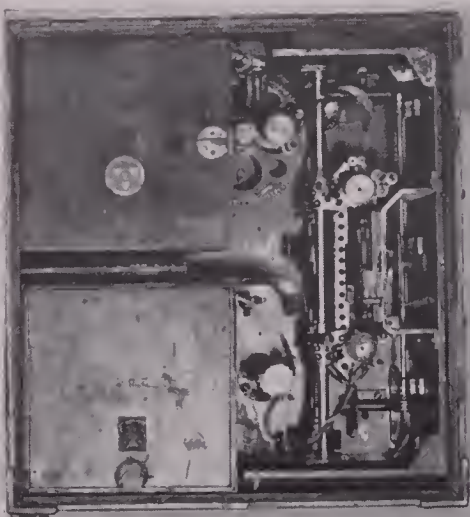


Fig. 17

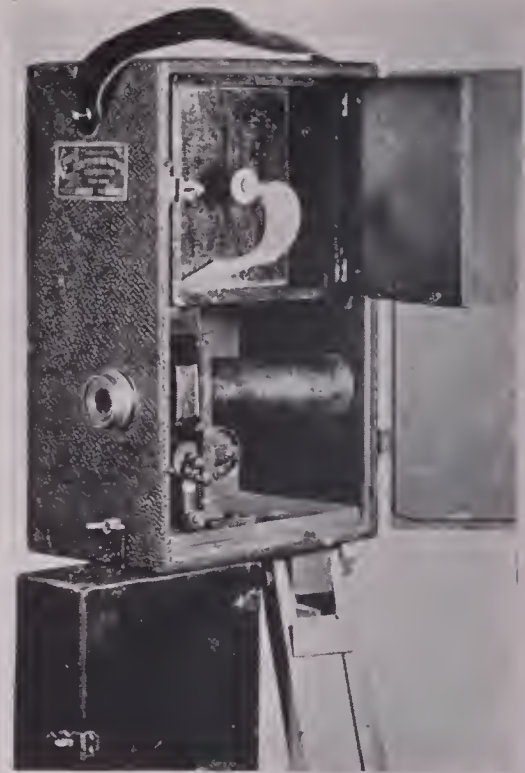


Fig. 18



Fig. 19

A.T. & T. Eyes Television

President W. S. Gifford of the American Telephone and Telegraph Company stated in his recent report to the stockholders that as soon as the war is over the company will provide intercity networks—ultimately nation-wide in extent—for television. "We plan to try out short wave radio relay systems for long distance telephone service and for television," he said. "We know that coaxial cable systems—cables which are capable of carrying several hundred telephone conversations simultaneously in two metal tubes a little larger than a lead pencil with a copper wire inside each extending along its axis—work very satisfactorily but we do not know whether or not radio relay systems will work better or prove more economical. We are in the communications business and we intend to use the best and most economical means whether wire or radio."

"Without Arcs I wouldn't have a picture"

Phil Tannura, A.S.C.



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CARBON PRODUCTS DIVISION, Cleveland 1, Ohio



New York, Pittsburgh, Chicago, San Francisco

Television Picture Definition

(Continued from Page 191)

cessive, and serious statistical tests appear to be called for. In the meanwhile, the average results of six observers are shown in Table 1.

In consideration of the foregoing remarks it seems legitimate to neglect the a column, and for interim computation

1—
purposes a — has been selected as a
1350
working figure for the "whole period" acuity of vision.

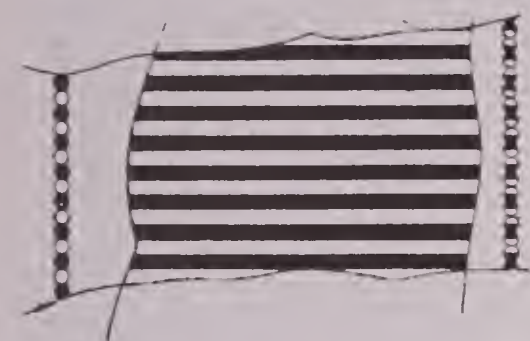


Fig. 1. Resolving Power of a Television Picture: left, scanning lines in mesh, right, out of mesh.

Frequency Requirements

We may now examine the numerical implications of this figure as affecting television standards and associated frequency bands.

The first four lines of Table II refer specifically to the television problem, whilst the fifth line gives an estimated comparison for the kinema. In the fourth column of the table, the heading N represents the quantity usually referred to as the number of picture points.

In line 1, we postulate a vertical viewing angle of $1/6$ as adequate for the home viewing case. The saturation number of lines for sequential scanning then

1350×2
works out to $\frac{\quad}{6} = 450$. Taking a

5:4 ratio this leads to a picture point value of 254,000. Assuming a 50 cycle repetition frequency, and with an allowance for masking and flyback, the net picture scanning time is 16 milliseconds and the frequency band required 7.94 Mc/s. The definition of this picture is saturated.

The second line gives the corresponding case for interlaced scanning. The number of lines is increased to 675 but the frequency band is reduced to 5.95 Mc/s. Again the definition is saturated.

The third line shows the pre-war B.B.C. service standard of 405 lines gross, or 385 lines net. The picture point value is 82,000 and the frequency band for which this number of lines is optimum is 1.92 Mc/s. The definition of this picture will be saturated at a viewing angle of $1/10.5$ which, however, is hardly acceptable as a viewing angle.

In the fourth line of the table we set

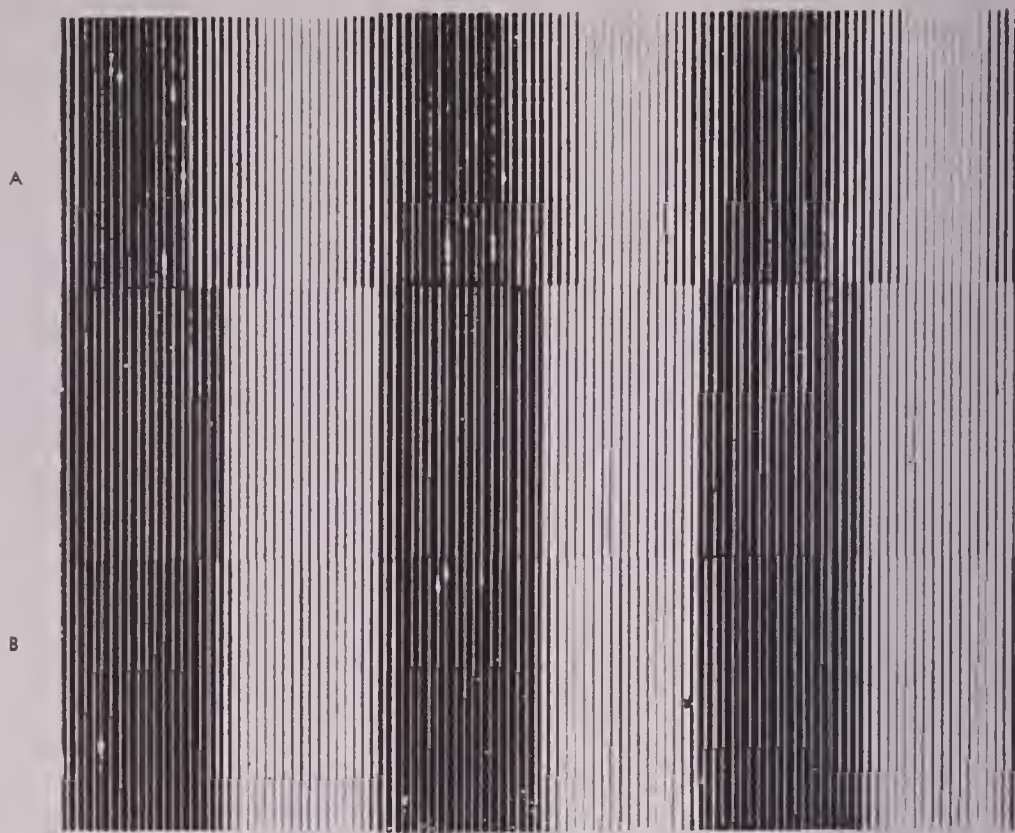


Fig. 2. Resolution Test Chart.

out an estimate of the best that could be obtained economically in terms of present-day technique. The number of scanning lines is taken as 525 gross or 500 net, which, incidentally coincides with the standard now adopted by the U.S.A. The frequency band for which this is an optimum is 3.26 Mc/s, which is obtainable on the existing carrier frequency by use of the vestigial side band method of transmission. The picture-point value of this standard is 139,000 and saturation definition is obtained at a viewing angle of $1/8.1$. It is admitted that this falls rather short of optimum, but it is considered a satisfactory compromise if it is stipulated that neither delay nor

material increase of cost can be tolerated.

Finally, coming to the fifth line of the table, it is estimated that a kinema picture of good definition will admit a viewing angle of $1/4$ before deterioration of definition is observable. It is thus equivalent to 675 lines sequential scanning, or, say, 1,000 lines interlaced scanning. The picture point value in this case works out to 600,000. To transmit this picture would require a frequency band of 14 Mc/s. Alarming as this figure may be, it presents a technical problem which is small compared with others of the implied project of producing this picture at full kinema size and illumination.

Aces of the Camera

(Continued from Page 190)

after the incident of the still he felt he could do no wrong. So he was all ready to receive more praise when he saw the same big shot headed in his direction again, and glanced around to count his audience. "Did you fog some film, yesterday?" the big shot wanted to know, glancing ominously at Harry. "Fog? What fog?" Harry spoke up with the manner of a man whose conscience is perfectly clear. "The sun was shining yesterday!" And without mentioning any names, but to prove the point that almost everybody had a lot to learn in those days, it must be recorded that the cameraman standing next to him, piped up on Harry's behalf, "You see, he's innocent!"

Harry can yarn by the hour about the fantastic happenings, and the human stories that bring the people and the in-

dustry of that era sharply into focus. There was the time he was up in Humboldt County, as second cameraman under Frank Urson, with James Cruze directing Wallace Reid, Noah Beery and others in "Valley of the Giants". They were using the railroad depot at Little River station for some of the scenes in the picture, and with the permission of the station agent the film making paraphernalia was spread all over the tracks. A lot of footage had been shot that day, and everyone began to hope that Cruze had had enough. But he decided he would get one more scene before the light failed and ordered the cameras reloaded. Unfortunately there was no more film. But no one wanted to assume the responsibility of having to tell Cruze the sad fact when the nearest supply was several hours away. It was then that Harry had a brainwave. Taking the station agent to one side he told him the situation, adding that he was

just a young fellow starting in the film business and would surely lose his job if Cruze found out about the shortage of film. You can save everything, he told the railroad man, if you will only tell Cruze that he will have to clear the track for a train that's due any minute.

The agent got the idea right away. The set was struck, and the situation saved. Noah Beery got an idea too. Taking advantage of the sudden respite he pulled out two thin dimes, and a couple of dice. Without losing the dice, and before the light failed him, he ran that twenty cents up to \$80.00; a sum that represented the entire contents of the pockets of those concerned.

It was while they were on location for the same picture that an incident happened that almost brought many a famous career to a sudden and tragic end. Most of the company, including Wally Reid, Noah Beery, Ralph Lewis, Guy Oliver, Grace Darmond, Jack Hoxie, and Harry, were in a caboose on the end of a train of flat lumber cars, being backed down the side of a mountain to a location 8000 feet above sea level. Suddenly, the coupling holding the caboose to the rest of the cars gave way. Before the company could realize what was happening the car was careening madly down the steep mountain decline, lunging crazily around tortuous turns, and throwing its occupants around like scattered duckpins. Then the wheels left the tracks, and with a terrible crash the caboose smashed through a trestle bridge and plunged down into the canyon below.

Inside the car the stove had overturned and spread flames which began to creep toward the injured and unconscious people. It was then that Jack Hoxie played a role more dramatic, more heroic than any he had ever played on the screen. Fighting for breath in the smoke and flame he smashed through the broken side of the car and dragged every member of the company to safety. Miraculously, no one was killed.

Harry Hallenberger learned the business of cameraman the hard way, when a cameraman had to know how to do everything. He had the best teachers in the business. Charlie Rosher and Art Miller in the beginning, and later as assistant to Arthur Edeson when that worthy was training his lense on Jack Holt and Clara Kimball Young.

In 1924 Harry filmed the first Potash and Perlmutter picture for Goldwyn. He filmed Eddie Cantor's "Special Delivery" in 1927. He was with Paramount until 1937, except for nine months with Technicolor during 1929.

For the last seven years he has been freelancing. During that time he has turned in some sterling work on some outstanding pictures. "Wells Fargo", "Arizona", "Louisiana Purchase" with Ray Rennahan, "Women at War", "It Happened in Paris", "China" and "Up in Arms". For his old mentor Arthur Edeson he recently did a color sequence in the musical, "Harvest Moon".

Harry has one of those talents with which Hollywood is so richly blessed, and which makes it possible for this town to be the film capitol of the world. Rich in experience, he is called upon to perform some of the most difficult assignments and can always be relied upon to do

them well. He is known in Hollywood as one of the finest exterior photographers in the industry. Couple this with his ability as an interior photographer and an expert in color, and you may well gather that Hallenberger really is a Camera Ace.

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DuPont Promotes Brayman

Harold Brayman has been appointed Director of the Public Relations Department of the E. I. DuPont de Nemours Company, succeeding the late T. G. Joslin, who died suddenly last April. Brayman has been assistant director since 1942.

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Monopack Processes

(Continued from Page 200)

borhood of 475μ , so here again we can pick a wave length whose absorption by these two will be in the ratio of $X_{31} : X_{21}$.

We have made masks whose use enables us to copy the densities present in only one of the layers in the color transparency, without interference from the other two. This enables us to make color-correct separations. The next problem is how to make them properly balanced. We turn again to our standard color patch. After masking we copy a red density equal to x_{11} , a green density equal to x_{22} , and a blue density equal to x_{33} . We know that these values represent something which originally was a neutral that transmitted only 10 per cent of the light incident upon it. Therefore x_{11} is the density in the cyan layer which is the image of a density whose value was 1.00. For proper balance, then, the value x_{11} must be copied so that a print made through the negative will yield a density of 1.00. This will be achieved if the red filter separation will be developed to a gamma equal to $1.00/x_{11}$ that of the desired negative gamma. Similarly the green separation must be developed to a gamma that is $1.00x_{22}$ that of the desired value, and the blue separation must be developed to a gamma which is equal to $1.00/x_{33}$ that of the desired value.

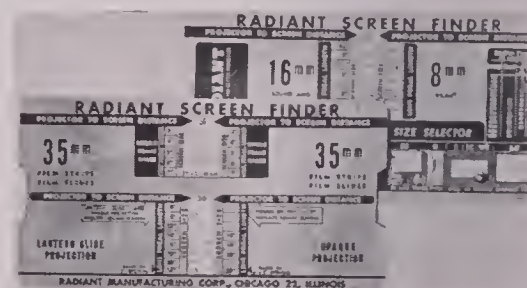
It should be pointed out that the reproduction process which is to be used does not enter into this discussion at all. If any corrections are to be made to compensate for defection in that procedure, they must be made over and above the ones noted here. We have merely offered a solution to the process for the making of accurate separations from a color transparency which uses a set of subtractive primaries characterized by the color matrix.

$$(x) = \begin{pmatrix} x_{11} & x_{12} & x_{13} \\ x_{21} & x_{22} & x_{23} \\ x_{31} & x_{32} & x_{33} \end{pmatrix} \quad (12)$$

The above procedure, outlined in great-detail in the August and October, 1943, issues of *American Photography*, repre-

sents a theoretical solution. In actual practice we can make some short cuts. An examination of the actual curves for the subtractive primaries used in Ansco Color or Kodachrome indicates that if the red separation be made with light whose wave length is greater than $650 m\mu$, it will not be necessary to mask to obtain a separation reasonably free from color distortion. A tolerable green separation can be made using light of wave length about $525 m\mu$. It is only the blue separation which must be color corrected, and this can be done by means of a single exposure, as indicated above. However, much may be said for the use of 3 masks, as this will reduce the otherwise unreasonable and unreproducible light intensity range of the normal color transparency, which incidentally arises mainly from the deficiencies of the subtractive primaries used.

New Screen Finder



A NEW "Screen Finder" to meet a long-felt need among users of motion pictures, slide films, slides and opaque projectors has just been released by the Radiant Manufacturing Company of Chicago. This slide pocket scale, it is claimed, enables any user to obtain perfect projection results by answering important questions quickly and accurately. It shows at a glance:

1. The proper screen size for each distance between screen and projector with a given lens.
2. The proper screen model to select.
3. The proper distance between screen and projector to obtain any desired size of picture.
4. The proper lens to use to obtain perfect results for each distance.
5. Correct show time for 8mm. and 16mm. silent and 16mm. sound films.

The Radiant Screen Finder answers "movie" questions on one side—and "still" questions on the other.

Announce Television Seminar

THE Radio Executives Club of New York has organized a "Television Seminar" which will hold fifteen sessions at which prominent experts will lecture on various phases of television. The first session was held on May 18, in New York City. Final session will be on August 24.

RENTALS SALES SERVICE

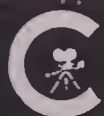
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Cameramen Come Through

(Continued from Page 193)

When the First Motion Picture Unit of the Army Air Forces was organized, cameramen out of every major and independent studio were enlisted and put into intensive training for Combat Photography. Cameramen now became gunners trained to shoot bullets of heavy caliber; trained to stop the enemy as well as to photograph his activity and his undoing, and that they have done it well is a tribute to their Commanding Officer. They are credited with: Three Messerschmitts shot down. One Focke-Wulf and three Zeros destroyed. One Messerschmitt damaged and two probable Zeroes, and one Jap Tanker.

On April 17th, this year, notice was flashed to the FMPU, that a commendation in the name of the President was given by the War Department to the 9th AAF Combat Camera Unit, which, prior to being sent overseas, was trained and activated at the FMPU, in Culver City.

The 9th was the first Combat Unit trained at the First Motion Picture Unit to be sent overseas to cover the activities of the 9th Air Force.

Major Frank Lloyd's camera unit photographed the history of the 13th Air Force from the Battle of the Northern Solomons to Bougainville. Over 150,000 feet of film was shot during this campaign by an Army Air Force Combat Camera Unit under Major Lloyd's command. While photographing aerial combat, half the Unit, which was sent to the South Pacific after being trained at the First Motion Picture Unit, was decorated and two men, S/Sgt. Jack Sterling, former MGM stunt man, and Sgt. Richard R. Batcheller, 120 S. Vista, Los Angeles, were credited with probable victories over Japanese Zeros.

One officer, Lt. Harold G. Moran, 4336 Cahuenga Blvd., N. Hollywood, has been reported missing in action. Capt. H. Clark Ramsay, 1944 Laurel Canyon, Hollywood, was severely wounded, and one-third of the command was hospitalized for malaria.

Compiled from reports now available, the list of men and their honors are as follows:

Major Frank Lloyd. Motion Picture Director. Air Medal.

Major John D. Craig, Director and Producer of Adventure Films. Air Medal with 4 Oak Leaf Clusters and Winged Boot, issued by RAF's Late Arrivals Club.

Capt. Clark Gable. MGM Star. Air Medal.

Capt. Emmett Bergholz. RKO Cameraman. Air Medal with 2 Oak Leaf Clusters.

Capt. Ellis W. Carter. Pine-Thomas Cameraman. Air Medal and Presidential Unit Citation.

Capt. Jack Blake. Warner Bros. Cameraman. Air Medal and Purple Heart, and Presidential Unit Citation.

Capt. H. Clark Ramsey. Combat Photographer. Air Medal and Purple Heart.

Capt. Raymond G. I. Fernstrom, A.S.C., Paramount News Reel Cameraman. Air Medal and Purple Heart.

Lt. James Bray. Pathe News Reel Cameraman. Distinguished Flying Cross. Air Medal with 2 Oak Leaf Clusters. 2 Messerschmitts downed.

Lt. Francis J. Burgess. Combat Cameraman. Air Medal. 2 Oak Leaf Clusters.

Lt. Casimer Karas. Combat Cameraman. Silver Star. Air Medal.

Lt. Andrew J. McIntyre. MGM Cameraman. Air Medal.

Lt. Hugh L. Wade. Combat Cameraman. Air Medal. 1 Oak Leaf Cluster.

Lt. Lloyd Ward. Combat Cameraman. Air Medal.

T/Sgt. George Ashworth. Combat Cameraman. Silver Star. D.F.C. and Cluster. Purple Heart. Air Medal and 2 Clusters. 1 Presidential Unit Citation and 1 Jap Tanker.

T/Sgt. Jerry J. Joswick, News Reel Cameraman and only cameraman to go on famous Ploesti raid. Brought back sensational shots of raid afterward shown in every newsreel in America. Distinguished Flying Cross. Air Medal with 1 Oak Leaf Cluster and Presidential Unit Citation. Recommended for Commission.

T/Sgt. Henry J. Ludwin. Combat Cameraman. Air Medal.

T/Sgt. Richard L. Hanks. Combat Cameraman. Air Medal.

S/Sgt. John F. Neistand. Combat Cameraman. Air Medal. 1 Oak Leaf Cluster and Winged Boot.

S/Sgt. Henry M. Temple. Combat Cameraman. Air Medal. 2 Oak Leaf Clusters.

S/Sgt. Milton Rosenblat. Combat Cameraman. Air Medal and 2 Oak Leaf Clusters. Presidential Citation.

S/Sgt. Whitfield P. Davis. Combat Cameraman. Air Medal. Winged Boot.

S/Sgt. Frank W. Goetz. Combat Cameraman. Air Medal. 1 Oak Leaf Cluster. Presidential Citation.

S/Sgt. Alex Kushner. Combat Cameraman. Air Medal. 1 Oak Leaf Cluster. Presidential Citation.

S/Sgt. Joseph Appleton. Combat Cameraman. Air Medal. Purple Heart.

Sgt. Marvin Rosenkrantz. Combat Cameraman. Air Medal. Winged Boot.

Sgt. Lawrence A. Van Dam. Combat Cameraman. Air Medal. Winged Boot.

Haggerson President U.C.C.

Fred H. Haggerson, former Vice President and Director, has been elected President of Union Carbide and Carbon Corporation, succeeding Benjamin O'Shea who has been President since 1941 and now becomes Chairman of the Board. Mr. Haggerson has been associated with Union Carbide and Carbon Company for 25 years.

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Denham Lab Getting Equipment



Above, Denham Laboratories

FILM production in England as soon as the war is ended will jump to unprecedented heights, and it is more than likely that many Hollywood cameramen will find themselves in England photographing pictures not only for British film companies, but for American companies as well.

This is the opinion of William Harcourt, Director of the Denham Laboratories, who has been in Hollywood for some time studying new methods and arranging for the building in the Denham Laboratories of developing machinery adequate to care for the expected increase in business.

"Instead of trying to buy developing machinery here and have it shipped", explained Harcourt, "we will make arrangements to obtain the blueprints of the machine we decide upon. Then we will build the machines ourselves and pay a royalty to the owners of the patents."

Harcourt said that Hollywood is far ahead of England in the matter of mechanical improvements and equipment. He also added that in England, due to the war, all the film industry has been able to do is to try to keep whatever

equipment they have in running order, with the result that a tremendous amount of equipment will be needed when the war is won.

England will see a big increase in the use of 16 millimeter film, says Harcourt, especially in the educational field. He says he is so sure of it that he is planning to add considerable 16 millimeter processing machinery. Only one half of the large Denham Laboratory building is equipped at present, but on Harcourt's return the entire plant will be set up.

"The thing that most impressed me in Hollywood", said Harcourt, is the wonderful spirit of cooperation shown by everybody in the industry. Every studio and every laboratory opened their doors to me and showed me everything they had in the processing field. I don't believe that would happen in England, believe me."

New Magnesium Film

UNVEILING the interesting process surrounding the production of the lightweight metal magnesium, the Bureau of Mines has announced the release of a new educational sound motion picture, "Magnesium—Metal of the Sea," which describes how this essential material is created from common sea water and salt brines.

The new film is available free for use by public schools, war-training classes, the armed forces, civic groups, clubs and other organizations. It is in 16mm. sound, and may be obtained by writing to the Bureau of Mines Experiment Station, 4800 Forbes Street, Pittsburgh 13, Pennsylvania.

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N.A.M.C. Looking Up

Lisle Conway, corresponding secretary of the Syracuse Movie Makers Association, writes that the proposed idea of a National Association of Movie Clubs (originated some time ago by the 8-16 Movie Club of Philadelphia) is slowly gaining ground. He reports that so far, five clubs in the East and Mid-West have evinced interest and have given the "green light" for its formation. Also that three other clubs have asked for additional details and are yet to be heard from. The four points so far proposed by the clubs in which such an organization could be of service to the movie clubs of the nation are:

1—To band together amateur movie clubs of this nation and Canada. To promote a better understanding of each other's problems and a better fellowship among these clubs.

2—To furnish member clubs with a free exchange film library and a source of tried and tested programs. Also to promote a more efficient and rapid, economical method of exchanging films by the use of the "round-robin" method of routing them.

3—To provide for those member clubs and their individual members, certain privileges which they, as non-member clubs might not be able to obtain.

4—To provide an Amateur News Photo Service for the member clubs and a method of obtaining "stock shots" from any part of the country easily and cheaply.

New Filmosound Releases

Bell & Howell Company have announced the following new film releases of the Filmosound Library:

THE GREAT IMPERSONATION (Universal). No. 2574, 7 reels. New streamlined, up-to-the-minute version of E. Phillips Oppenheim's classic tale of counter espionage. (Ralph Bellamy, Evelyn Ankers, Kaaren Verne). Available from June 19, 1944 for approved non-theatrical audiences.

WHEN JOHNNY COMES MARCHING HOME (Universal). No. 2444, 8 reels. Hero on furlough tries to avoid being lionized, and comes under the "protection" of live-wire group of teen-age youngsters. (Donald O'Connor, Gloria Jean, Peggy Ryan and Allan Jones). Available from July 1, 1944 for approved non-theatrical audiences.

ZAMBOANGA. No. 5399, 8 reels. Highly interesting, dramatic story of life of Moro pearl fishermen. All-Filipino production, sounded in Tagalog with good English over-titles. A touching, thrilling, authentic, self-told film story of our heroic allies.

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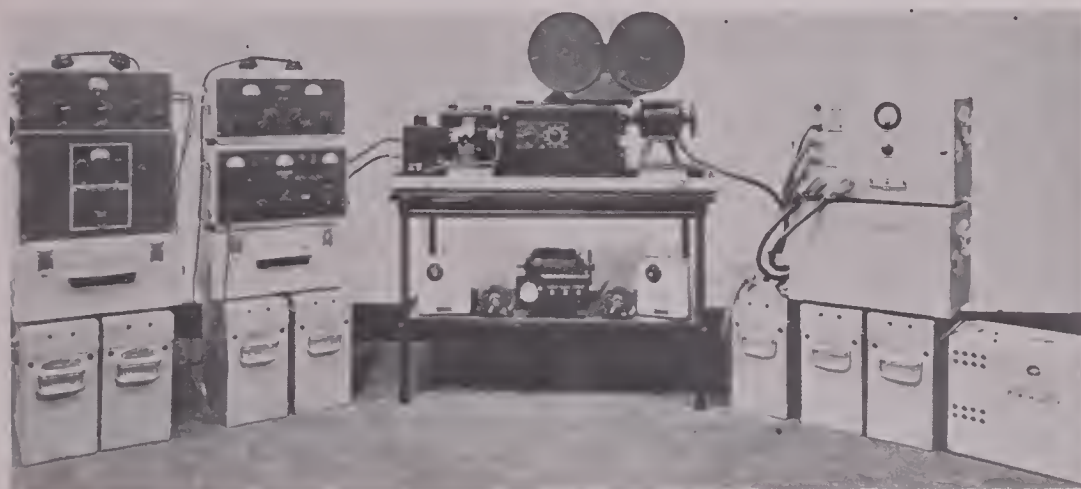
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SERVICIO CINEMATOGRAFICO S.A. AND JENKINS TO INSTALL WESTERN ELECTRIC EQUIPMENT



Recording channel now on way to Mexico City where it will be a prime unit of Servicio Cinematografico S. A.

WITH the local production of motion pictures in Mexico City continuing to mount, E. S. Gregg, vice president of Western Electric Export Corporation, has announced the closing of recording agreements with two Mexican companies, Servicio Cinematografico S. A. and the Jenkins interests, which call for the immediate installation of six complete channels of Western Electric recording equipment. Servicio provides a recording service to the Clasa and Azteca Studios.

"We are glad we are able to assist," Mr. Gregg explained, "the trend toward Spanish language production in Mexico and to meet the essential needs of Mexico's fast expanding motion picture requirements. We believe our actions will assist in cementing the present favorable relationship between Mexican and American business after the war."

"R. O. Strock, who for a number of years was associated with Eastern Service Studios and Audio Productions, Inc., of Astoria, Long Island, and subsequently with Export as recording engineer, will go to Mexico City April 25th," Mr. Gregg said, "where he will supervise the installation of the new equipment and remain to instruct the staff of Western Electric Company of Mexico in the latest recording techniques. He will also assist the studios with the technical side of their production activities."

Princeton Film Center Seeks Hollywood Technicians

GORDON KNOX, of The Princeton Film Center, visited Hollywood recently to negotiate production of additional aircraft indoctrination films by that organization, and to secure technicians for his New Jersey plant. The film Center is now active in the production or distribution of pictures dealing with the Boeing Flying Fortress, Bell Airacobra, Consolidated Liberator, and other Army and Navy aircraft.

Color Coming Into Own After War

POSTWAR planning now being done by the producing companies has one point in common, according to Dr. Bela Gaspar, inventor of the color process bearing his name, who recently completed a survey of such plans:

"All of the companies are looking forward and working to the day when color will largely displace black-and-white on the nation's screens," he says. "Thus far, experimental work has been limited by several factors, notably the raw stock and equipment shortage. As those conditions change, and especially when the war ends, I expect to see phenomenal strides taken on all hands in the field of motion picture color."

Dr. Gaspar predicts no overnight switch from the black-and-white medium, if only because all companies have huge investments in lab processing equipment for such footage.

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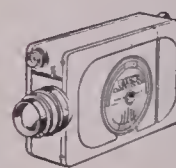


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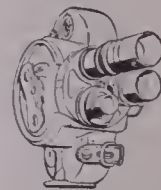
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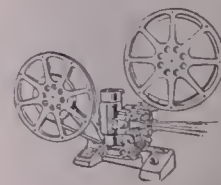
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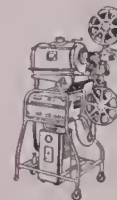
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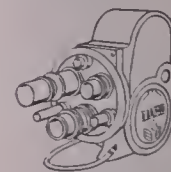
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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

JULY, 1944

No. 7

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THE FRONT COVER SHOWS a scene being taken during the filming of Paramount's "Hail the Conquering Hero." John Seitz, A.S.C. was Director of Photography on this picture.



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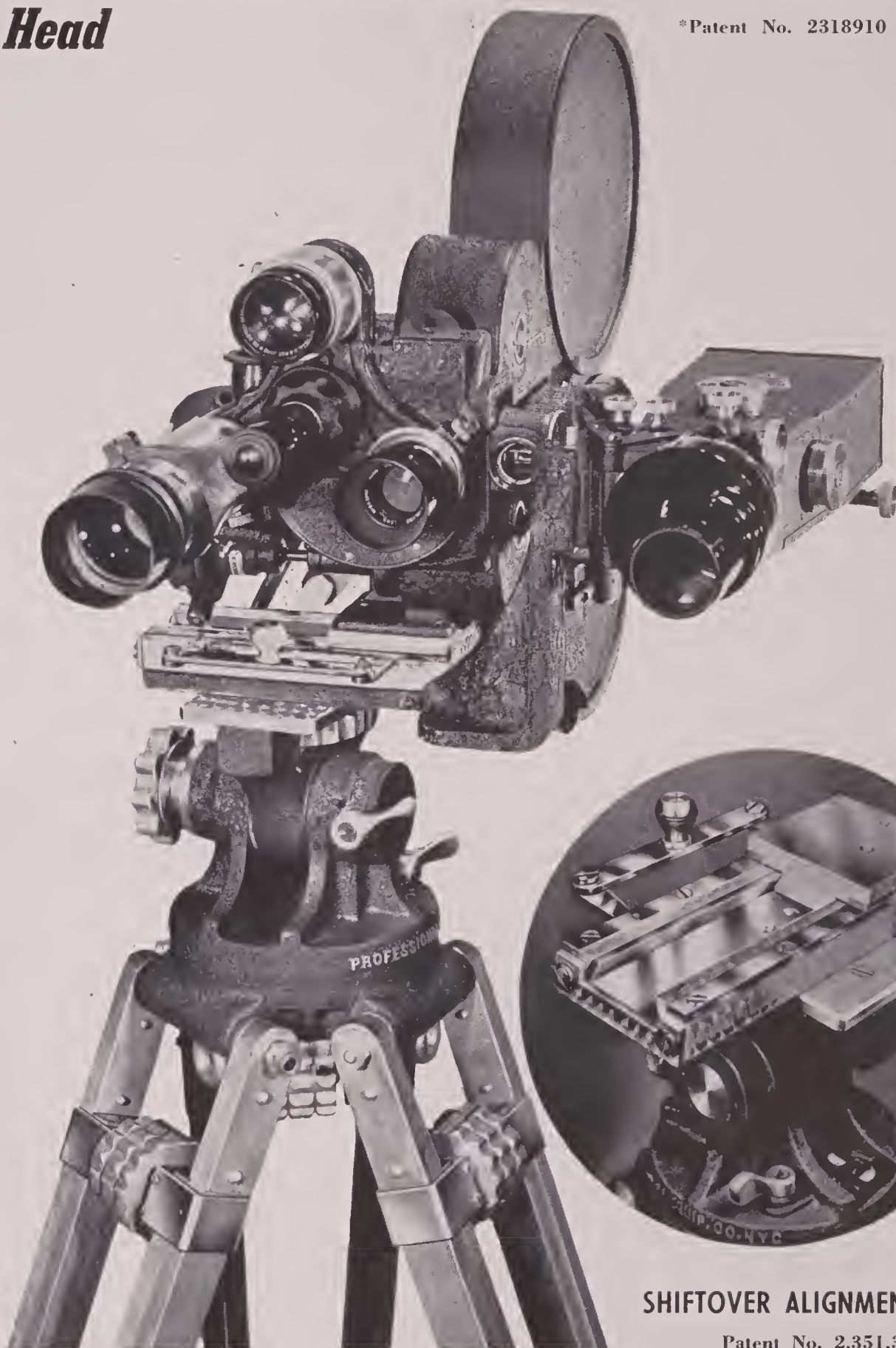
"PROFESSIONAL JUNIOR"* TRIPOD

with Removable Head

*Patent No. 2318910

The friction type head gives super-smooth 360° pan and 80° tilt action. It is removable, can be easily mounted on our "Hi-Hat" low-base adaptor. The large pin and trunnion assures long, dependable service. A "T" level is attached. The top-plate can be set for 16mm. E. K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

The tripod base is sturdy. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. Complete tripod weighs 14 lbs. Low height, at normal leg spread, 42". Extended height 72". All workmanship and materials are the finest. Also available are heavy fibre carrying cases.



SHIFTOVER ALIGNMENT GAUGE

Patent No. 2,351,386

***Tripod Head Unconditionally Guaranteed
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"Professional Junior"* Tripods, Developing Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and Other Government Agencies—also by many leading newsreel companies and 16mm and 35mm motion picture producers.

★ We show above a closeup of the Shiftover Alignment Gauge and also a view of the B & H Eyemo camera mounted on the "Professional Junior" Tripod and Shiftover. These have been especially adapted for aerial use by the Office of Strategic Services, Field Photographic Branch, Wash., D. C.

★ This Shiftover device is the finest, lightest and most efficient available for the Eyemo Spider Turret prismatic focusing type camera.

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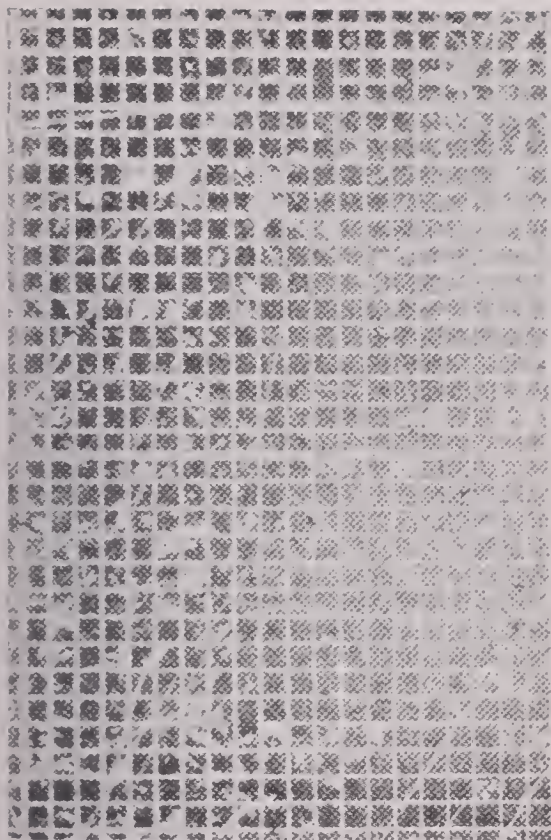
★ The Shiftover has a "stop-bracket" which prevents the camera from sliding off the dovetail base—and is provided with dowel pins which position it to top-plates of tripods having $\frac{3}{8}$ or $\frac{1}{4}$ -20 camera fastening screw.

FRANK C. ZUCKER

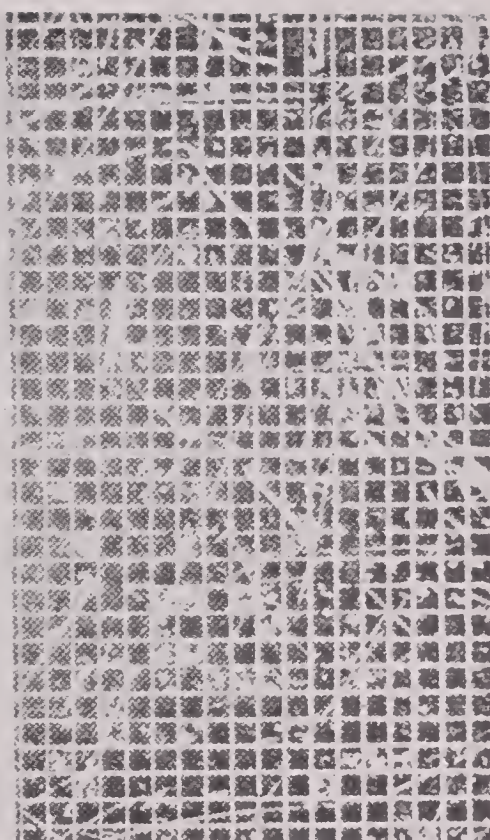
CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY



This striking photograph shows William Snyder, A.S.C., photographing the newly-risen volcano, Parangaricutiro, in Mexico, where they were filming scenes for "The Story of Dr. Wassell". The pictures of the volcano later were incorporated in the Gary Cooper starring film which was made by Paramount Pictures.



A



B

COATED LENSES

By K. M. Greenland, Ph.D., A.Inst.P.

IN STRIVING for a perfect optical system, the lens computer makes the most of the optical glasses available, and the glass-maker and the lens polisher do their best to meet the specifications of the computer. But there is one opposing factor over which they have very little control: that is the loss of light due to reflection at the surfaces of each lens. The number of reflecting surfaces in a system of lenses can be reduced by cementing together some of the surfaces, and this is done wherever possible, but there is an obvious limit to the application of that remedy.

The reflectivity of a glass-air surface is usually between 4% and 7½% according to the type of glass, so that the loss by reflection seriously reduces the brightness of an image if the lens system has several components. To make matters worse, a fraction of the reflected light from the high-lights of the object eventually reaches the image, where it invades the shadows and so reduces contrast. In certain cases the haze is even concentrated into flare spots and ghost images.

A method has now been developed for reducing the reflectivity of glass. Its principle is that the light entering or leaving a lens surface is reflected in two stages instead of all at once in such a way that the reflected components are mutually destructive.

This is achieved by putting on to the

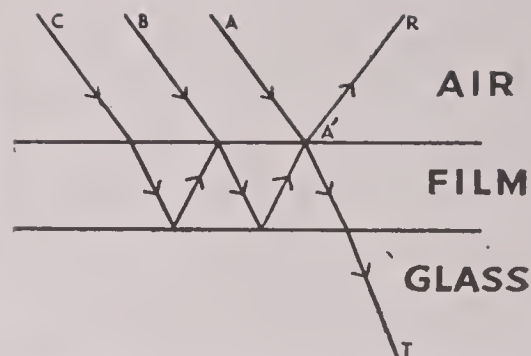
surface of the glass a thin transparent film so that there shall be two parallel reflecting surfaces—the glass-film boundary and the film-air boundary. The two sets of reflected rays so generated will annul each other in that they are equal in intensity but opposite in phase. They are made so, as nearly as possible, by correct adjustment of the thickness and refractive index of the film.

Principle of Anti-reflection Film

The method is an application of the principle of interference of wave motions. The light energy which no longer appears as reflected light is by no means lost. That would in any case be impossible, but in this case we find that it is restored to the transmitted beam with the happy result that the brightness of the image is increased.

Fig. 1 shows the action of a coating of anti-reflection film on a flat glass surface. $A'R$ is a typical reflected ray and, as you can see, it is made up of a direct reflection from AA' and innumerable small additions through multiple reflections from other rays of which the first two, B and C , are shown on the diagram. Similarly the transmitted ray $AA'T$ gets contributions from the same sources.

It would take too long to work out the conditions now, but it is a fact^{1,2} that, for normal incidence, if the thickness of the film is one-quarter of the wavelength of the incident light, then



Above, Fig. 1. At left, Fig. 2. Photographs of a Test Object taken with a 2in. f/1.5 lens, uncoated (A) and coated (B).

all the additions to the reflected ray from rays like B and C are in opposite phase to the direct reflection from A and all the additions to the transmitted ray are in phase with it. Furthermore, if the refractive index of the film is the square root of the glass, the combined amplitude of all the multiple-reflection components of $A'R$ is equal to that of the component from AA' . As they are opposite in phase, the result is: no reflection. Under the same conditions the additions to the transmitted ray, being in phase with it, are just enough to make up for what it loses at the two boundaries of the film. (The diagram does not show all the rays to which A, B and C give rise. Each ray is partially transmitted and partially reflected at each boundary, but the rays not shown form part of other interference systems identical with this one.)

The effect of a quarter-wave film of the right refractive index is therefore to allow a ray perpendicular to the surface to pass into the glass without reflection. The film would be equally effective if the ray were travelling out of the glass.

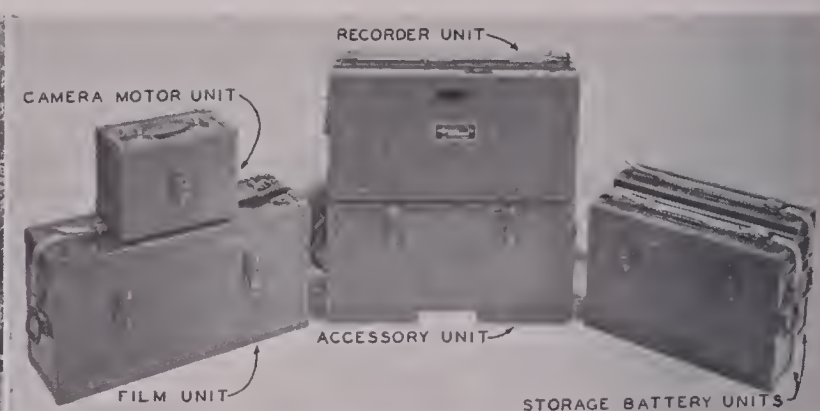
Without going into details, I can say that the same film criteria give almost complete elimination of reflection for angles of incidence up to about 20° so that the film is effective in converging or diverging beams and on the curved surfaces of lenses. Also, by making the film a little thicker, non-reflection can be obtained for particular angles of incidence up to 45° .

Heterochromatic Light

So far I have only dealt with monochromatic light. When white light falls on a film adjusted for non-reflection in, say, the yellow-green, the yellow-green component is fully transmitted and not reflected at all. For wavelengths further from the yellow-green there is some reflection and some reduction in transmission, but even in the violet and the red the reflection is very small. The reflected light is therefore a faint purple (which gives an anti-reflection film its characteristic appearance). The transmitted light is tinged with yellow-green, but this is only noticeable when the light passes through a train of coated lenses.

I have taken this example with the maximum transmission in the yellow-green, because such a film gives the greatest effect over the whole of the visible spectrum. If maximum transmis-

(Continued on Page 247)



Left, Fig. 1. Above,
Fig. 2.

insofar as film travel and sound track width and location were concerned.

For purposes of portability and film economy this use of 16mm. can be of advantage without sacrificing the benefits of the 35mm. sound quality. However the original requirement has since been changed and the Army Pictorial Service requires only the 35mm. adaptation, although the 16mm. use may fill a need elsewhere.

Figure 2 shows the complete equipment which consists of the following units:

1. Recorder unit, containing all of the operating parts of the complete recording channel, such as film drive, amplifier system, controls, etc. . . weight 93 pounds.

2. Accessory unit, which carries the various accessories required, such as microphone, head phones, cables, spare parts, etc. . . weight 60 pounds with normal spares and accessories.

3. Film unit, which carries the film supply and all accessories relating directly to the use and handling of film. It carries a maximum of 6000 feet of 35mm. film, or a somewhat greater amount of 16mm. film . . . weight 40 pounds complete with all usual accessories, but without film.

4. Two storage battery units, which are the entire battery supply for the complete equipment, including the camera motor. Each is a 24 volt, 45 ampere hour battery and weighs 87 pounds. The units may be used separately or together.

5. Camera motor unit, which consists of a carrying case and camera motor for the Mitchell NC type camera. Total weight of motor and carrying case, 24½ pounds.

Thus the complete equipment weighs approximately 392 pounds without film. For particular uses where weight must be further reduced, less film may be carried and certain of the accessory equipment temporarily eliminated. The bare minimum weight for sound recording only, using one one-thousand foot roll of film is slightly under 200 pounds.

The recorder unit, accessory unit and film unit are all of the same outside dimensions, namely 10" x 26" x 13" and the storage batteries are considerably smaller. Each unit can quite readily be carried by one man or a small crew can manually transport the entire equipment over considerable distances. For use on shipboard; airplanes or where space is at

PH-346-A Recording Equipment

By WESLEY C. MILLER

Chief Engineer, Sound Department,
Metro-Goldwyn-Mayer Studios

THE greatly increased motion picture production demands occasioned by the war found the armed services in the position of being unable to secure a completely portable 35mm. double film sound recording system from the usual supply sources. In July, 1942, the United States Army Pictorial Service of the Signal Corps, wishing to take advantage of the operating and design experience of the motion picture studios, requested the Research Council of the Academy of Motion Picture Arts and Sciences to undertake the design and construction of such equipment. A committee was set up under the Research Council organization with the writer as chairman. However, as it subsequently turned out, virtually the entire conception and responsibility for the project remained with the writer as an individual. Fortunately it was possible to undertake the work in the Metro-Goldwyn-Mayer Sound Department so that the advice and experience of many interested individuals became available.

The project was undertaken by the Research Council on its usual nonprofit basis and the only engineering costs directly charged to the work were those relating to actual drafting and physical work. The contractual relationships were subsequently modified so that the Stephens Manufacturing Company of Los Angeles became the prime manufacturing contractor, with the Research Council and the writer continuing in their responsibility for the design and for engineering supervision of the manufacture.

The primary need was for a limited number of units for immediate service by the Signal Corps. In the meantime other branches of the armed forces have shown an interest in the potentialities of the equipment. Keeping in mind the war time demand every attempt has also been

made to have the equipment capable of permanent use by planning later modification for even greater flexibility. At relatively slight cost and complication it can be adapted to record nearly any of the conventional types of sound track, it can be arranged for synchronous or interlock operation for stationary use and at the same time retain its desirable portability features. Its post war possibilities for commercial studio use have been apparent to studio technicians who have examined it.

The first four units are now in service and have been approved by the Army Pictorial Service. An example of its use in the field is shown in Figure 1.

Portability and Quality Requirements

The requirement was a film recording channel which would operate with or without a camera and which would be as small, compact and light as practicable and be capable of relatively high quality work. Mechanical construction to withstand field operation, ease and reliability of operation by relatively inexperienced personnel and provision for simple and adequate maintenance were also of importance.

The equipment was to be capable of use wherever the double system, that is, sound and picture made on separate machines, was required. The first models were to be designed for use with the Mitchell NC type 35mm. camera with, however, the expectation that later adaptations would be made to accommodate other types of cameras, either 16mm. or 35mm. 35mm. standards were specified for the sound recording with the added provision that 16mm. film should be accommodated if possible, with however, the provision that the 16mm. film and its sound track should conform to 35mm. 90 foot per minute standards



Top left, Fig. 3. Top right, Fig. 4.

a premium and handling is difficult the package sizes are very useful.

In spite of these reductions in weight and size, the sound quality obtainable with the equipment very closely approximates the general average of commercial sound recording. Picture quality and results are entirely dependent upon the camera and its operation, as the only purpose which the recording equipment serves in this connection is to provide a means of driving the camera in synchronism with the recorder. In this respect the drive is identical with that provided for studio location purposes.

Recorder Unit

The recorder unit is the heart of the equipment. It contains the entire recording channel except for microphones, headphones and battery.

The film compartment in the front houses the film movement and the galvanometer and also serves as a film magazine during operation. A rear compartment readily accessible by opening the rear cover, houses the driving motor, amplifier and all of the miscellaneous equipment required to complete the recording channel. Control panels are located in the top of the box with all of the voice controls, such as the mixer, volume indicator, meter switches, etc. at the operator's left, and a power panel controlling the motor systems at the right. The case is constructed in such a manner as to make all of the various elements quickly and easily accessible while at the same time being of sufficiently sturdy construction to withstand the kind of treatment which it is apt to get under field conditions. Figures 3 and 4 show two views of the recorder unit.

Figure 5 shows the control panels in the top of the recorder unit box. When not in use these control panels are covered by doors which swing out of the way to make the control panels available for operation.

Film Drive

The film drive employs a single sprocket which acts as a combined pull-down and hold-back sprocket and a re-

cording drum, which is controlled by a flywheel system of the rotary stabilizer type. The take-up clutch is mounted on the sprocket shaft and has provision for adjustment from the film compartment. The clutch drives the take-up spindle through a silent chain.

All of the various rollers associated with the film drive are mounted on a removable plate. To use either 35mm or 16mm film the proper plate is installed and the corresponding sprocket is placed on the sprocket shaft.

Film Handling

The conventional external magazine is eliminated in this design and a form of daylight loading technique has been adopted. Film as received from the supplier is loaded in the dark room onto a reel which is composed of two flanges screwed on either end of a hub. A cover is then placed over the loaded reel with three or four feet of threading leader brought out through a slot in the cover. In this condition the reel of film may be exposed indefinitely to daylight. To load a reel of film into the recorder, a film reel with its cover in position is placed on the feed spindle and all of the threading operations are carried on with the reel cover in position. When the threading is complete the reel cover is removed and the film compartment door is closed. Unloading is done in the reverse fashion, that is, the film compartment door is opened and a reel cover placed in position on the take-up reel. A loading bag is supplied which covers the entire recorder during the reel cover removal to prevent light striking the film.

It was the original intention that gray anti-halation film stock should be used. In this case the use of the loading bag was unnecessary except under extreme light conditions. However clear base film is now a standard in the Services so that the use of the loading bag is specified for all loading and unloading operations.

The film reel parts, loaded reels, film covers, film supply and loading bag are carried in the film unit, Figure 2. The use of this form of film reel and the

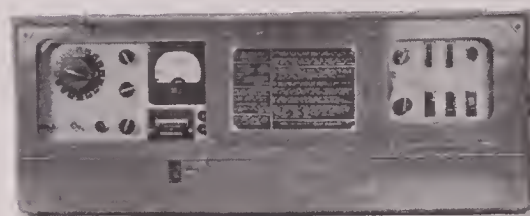


Fig. 5



Fig. 6

elimination of the conventional magazine makes quite a saving in weight and size of equipment and offers no more difficulty in operation than in the use of 16mm. or Eyemo camera equipment.

Motor Drive System

Both recorder and camera driving motors are a special design of the conventional DC interlock type, operating from 24 volt direct current derived from the storage battery unit, with a three phase, 24 cycle, 110 volt interlock supply derived from auxiliary windings in each motor. The four pole recorder motor, which is an integral part of the recorder unit, operates at 1440 RPM. The two pole camera motor operates at 2880 RPM. Field rheostats controlling the speeds of the

(Continued on Page 243)



Left, a pre-shooting conference to outline the film.

Above, shooting a scene showing how to can vegetables. Scene at bottom of page shows cameraman photographing aerial dusting of a peach orchard.

Agricultural Motion Pictures In North Carolina

By **DERMID MACLEAN**

IN A recent issue of the *AMERICAN CINEMATOGRAPHER* there was an article about the U. S. Department of Agriculture's current motion picture program.

Producers of entertainment pictures may well wonder how the small staff available to the Department's motion picture division is able to turn out so many comparatively high grade pictures. A crew of five to record a sound sequence in the field does not give much play for anything but the most straight forward set-ups. The word "comparatively" is used, not in any derogatory sense, but just keeping in mind the smoothly flowing stories and technical excellence achieved through the combined efforts and "know-how" of a staff of fifty or a hundred, such as may be used on any important Hollywood production. Although perhaps the wonderful thing about Big Time picture making is how the producer ever coordinates the many individual jobs into one integrated whole.

But as the USDA is to Hollywood, so are some of the motion picture producing units in various colleges to the USDA. Some of these college units have been in existence many years; some may be operating on a shoe string compared to the endowments backing others; but most of them, though suffering from the common ailment of lack of help, are continuing their educational or research programs.

The Agricultural Extension Service of North Carolina State College is producing motion pictures of a similar type to those in the above mentioned article, but their staff is down to one man. The story, direction, photography, and cutting may sometimes grate on the senses of some of us who are technique conscious, but those pictures already produced are doing the job, and the audience for whom they were made are enjoying and profiting from them.

The background to this program started early in 1943 when Mr. Richard J. Reynolds, of Winston-Salem, offered the college the services of a director-photographer who was to make a series of motion pictures designed to show local (North Carolina) farmers how to increase and improve their crops or livestock. Subsistence farming had to be given a shot in the arm, so to speak, due to the fact that too many people were coming to town Saturday mornings, not with extra goods to *SELL* on the curb market, but with their carefully garnished savings to *BUY* canned goods. This also tied up very clearly with the post-war outlook on the food situation, both national and international.

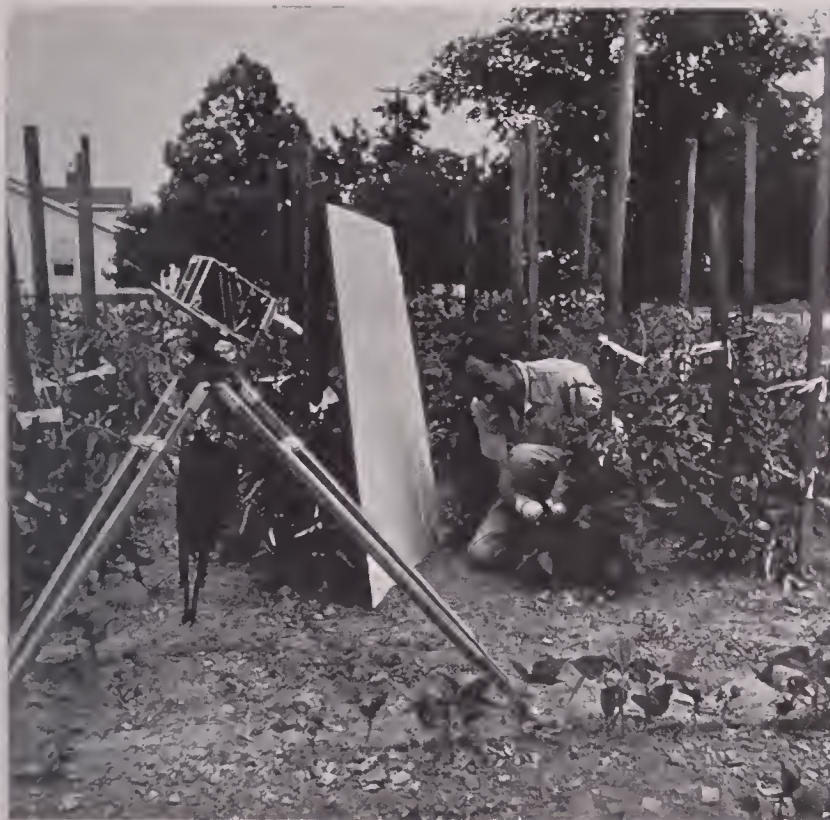
Following a grateful acceptance of this

gift to the State, the Extension Service called in its agricultural specialists and got them to vote on the relative importance of each and every subject that should be covered. Needless to say, not a single specialist thought his own pet subject should be second to any, but fortunately there were a few others present with less directed interests, and the resulting list of subjects lined up with Home Gardens (the farm equivalent of Victory Gardens) as of major importance. Then came such things as poultry, swine, oil crops, pastures, etc., with the request that, "we can make very good use of as many pictures as possible, as quickly as possible."

Enthusiasm ran high, a permanent assistant (and a very good man) was assigned, phone calls requested, "Can our picture be ready for a Grange meeting next month?", notes were left on the cameraman's desk as to picture possibilities,—impossibilities might have been a better word in some cases. Such a state of affairs is contagious and in a rash moment the promise was made that it might be possible to finish five pictures within the year. When the U. S. Navy stepped in and decided it had a better use for the "permanent" assistant, and the agricultural specialists had assignments that interfered with the weather varying shooting schedule, the promise turned out to be a particularly rash one.

Most agricultural subjects look their best following the last frost and before the scorching hot summer sets in,—April, May and June at the most. This left a couple of months open previous to April (and after the program was announced) so it was decided to start right away planning and shooting scenes on the value of the upkeep of farm machinery a winter subject in itself. The procedure outlined for this picture was followed in general by all the other subjects covered, although of course, each subject had its own set of problems and





each succeeding picture simplified the "modus operandi" of the following ones.

A rough story was first outlined and in due course agreed upon by all parties involved. A rough draft of the narration to accompany the story followed this. Then came the examination of the various possible sites and the selection of as many of them as were needed. Generally speaking, interiors calling for artificial light were eliminated entirely due to the lack of adequate wiring, and stage sets were out of the question because of a shortage of help and materials.

In all cases, site selection involved a number of problems both photographic and otherwise. Gasoline and tire rationing have tied down most of the shooting to within fifty miles of the base of operations, the State College. Unfortunate as it may be, some farmers do not cooperate fully with State and Federal workers, and cooperation is the keynote in undertakings of this type. (This is a situation that will undoubtedly be corrected to a large extent when a picture on this subject gets into circulation.)

At the final location chosen, the farm buildings and the farm family itself must be typical of the financial and social position of the audience at whom the picture is chiefly directed. All buildings shown must be built, within reason, according to Extension recommendations, unless of course they are to be pointed out as bad examples. And in every case where certain members of the farm were to be featured in the story, it had to be reasonably certain that they would be available any day upon arrival at the scene; (this proved to be such a stumbling block due to the lack of telephones and the changeable weather, that all future pictures are being planned keeping this fact very definitely in view, that is, eliminating personalities as far as possible).

Following agreement as to the various locations to be used, a shooting script was drawn up. A series of metamorphoses of scenes and sequences and scripts finally evolved one of a type that resulted in being not only practical for the motion picture department, but very intelligible to the various agricultural experts whose assistance was needed, some of whom found it hard to visualize the final effect of a number of disjointed and individually shot pictures. A standard long-leafed yellow scratch pad was ruled with one column of two-inch squares on the near left hand side. Each square represents a scene in the finished picture and in the order in which they will appear on the screen. In each square is a sketch of the set-up with the approximate camera and subject position, and to the right of each sketch is a description of the scene. The space to the left of the drawing is reserved for the cameraman's notes such as props, background, camera-angle, costume, and so forth. As each scene or sequence is shot, each sketch or page of sketches can be checked off.

Contrary to the general rule, each scene was not slated unless it happened to be one of a number of similar shots that might be hard to identify. Very little use was found for these markings due to the fact that the cutter had also been the director and cameraman and consequently knew each scene backward and inside out. The markings might have helped on a few occasional shots but the time consumed for the "actor" or the cameraman himself to go through the actual physical motion involved to incorporate this identification with every scene did not warrant the practice.

The procedure following the return of the developed film from the processing lab in Rochester was very simple and sufficient: each one-hundred foot roll



Pictures on this page show cameraman making various scenes for his agricultural films.

was examined in a carefully cleaned up projector (the first of only two screenings allowed the original Kodachrome due to possible scratching). The contents of each roll were then listed on a standard 3½ by 5 inch filing card headed as Roll No. so-and-so, then Scenes No. such-and-such, Take No. 1, (or 2, or 3). Comments as to the best take and other information can be added to the card. No eliminations were made at this time except for false starts and obvious errors. As soon as all the pictures were in and time could be given to cutting, the rolls were re-examined on a viewer and n.g. or duplicate takes collected on a separate roll and filed away in the individual mailing boxes, with a description of the contents on each box. In this way these are available in case of a change of plans or for possible use in some other picture. The good takes were spliced up in cor-

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Aces of the Camera

Jackson J. Rose, A.S.C.

By W. G. C. BOSCO

ONE of the most striking things about the men who make up the membership of the A.S.C., men who work hard by day and frequently by night shouldering the tremendous responsibility that goes with their job of putting Hollywood's expensive productions on film, is that the hobby that fascinates the great majority of them, that takes most of their spare time away from the camera, is photography. It is a striking fact, and there is no doubt a moral to it; although it will not be the purpose of this article to point one out. But it will be clearly seen that jokes about sailors taking a boat out on the lake on their day off, or bus drivers riding to the end of the line on their own time would fail to draw a smile from these camera-happy chappies of the A.S.C.

This preoccupation with the camera and things photographic, on and off duty, marks the born cameraman. It is a trait that has directly and indirectly resulted in any number of refinements and improvements in equipment and technique that has blessed the industry as a whole. This was particularly

true in the early days when most improvements were the result of the initiative of individual cameramen who almost certainly had to do much of the experimenting on their own time.

Jackson J. Rose, A.S.C., is an excellent example of the type of man who has that instinctive "feel" for photography, and making it his life work, has helped by his contributions over the last thirty-four years to reflect credit on the profession of which he is a member.

Jack came into the picture business via the old Essanay Company in Chicago when Harry Zech, A.S.C., hired him on the strength of his reputation as a commercial photographer. That was in 1910, and he stayed with that company until 1919. During that time he photographed the early Charlie Chaplin pictures as well as those split-reel epics featuring the great heart-throbs of the day, Francis X. Bushman, Bryant Washburn and Henry Walthall. But of greater distinction, particularly to cameramen, is that Jack used in 1912, the first 35mm. Bell & Howell Motion Picture Camera ever made; Bell & Howell camera number one. It was of all metal construc-

tion, had a very small collapsible upside-down finder, two lenses, a 2 in. and a 3 in. and a two-hundred foot magazine. Not quite what you would expect to find in a B & H camera today, but a tremendous improvement over the cumbersome old black boxes that had been breaking cameramen's backs as well as their hearts up until then. It opened Jack's eyes to what was possible in a motion picture camera, and some of the first improvements made on this early model, many of which are still in use, were the result of the suggestions made by him and his early associates at Essanay. The mattebox was one. The iris, which was first fitted and adapted to the camera from the iris of an old stage spot-light, was another.

Jack was always inventing something new, always adding some improvement to his camera. So much so that in its issue of December 8, 1917, the Motion Picture News was moved to say, among other things, that "... when he (Jackson Rose) goes out to shoot a picture it takes a brave actor to keep from running away from the machine; it looks so much like a Gatling gun." That they weren't exaggerating very much will be evident from the description of Jack's camera at that time, printed, not without awe, by one of the contemporary newspapers.

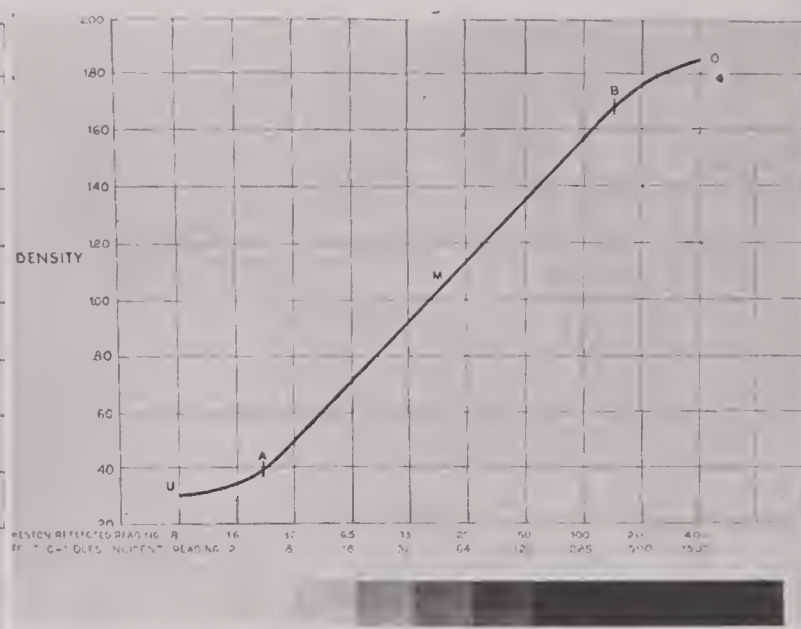
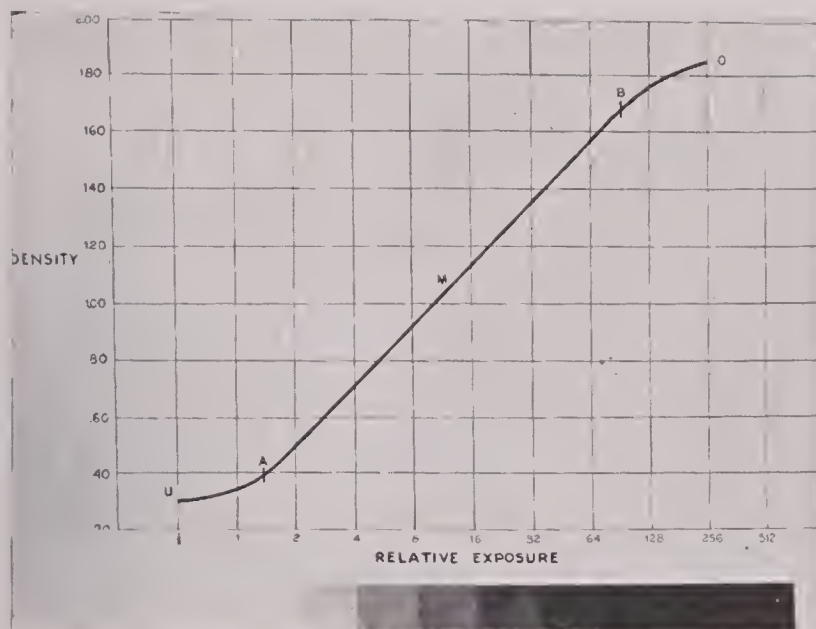
"The accompanying photograph shows what is said to be one of the most complete cinematograph outfits being used at the present time by any company in America. The camera with its attachments represents an outlay of \$2000!"

"The camera originally was made by Bell and Howell and is equipped with a 1000 ft. magazine; 32, 50 and 75mm. photo lenses and matched finders—6½ inch for telephoto work; collapsible sun shields for all lenses; lens markings accurately scaled from 6 ft. to infinity; 170 degree shutter; round closing diaphragm; square closing device; diamond shaped vignetting shutter; rising and falling curtain shutter (!!!); device to change focus of any lens while photographing; oval shaped sliding mash shutter; auxiliary aperture plate for marking dissolves; mask equipment of all shapes and sizes; footage recorder and picture counter which registers each individual picture; gear device to make any length dissolve or fade; tripod with automatic release for quick panoramic and up and down tilting motions."

That wasn't the only time Jackson Rose and his camera broke into print. The Chicago papers in 1917 carried a story that not only helps, in retrospect, to mark the difference between cameras of that day and this, but also the difference in a way of life. The story was variously headlined: "Witnesses Tell of Blind Man's Peep at Ankle." "Film Ankles Flash in Suit by 'Blind Man.'" "Movie Shows Peter Zyla, Suing for \$3500.00 for Loss of Sight, Coyly Focusing Optics on Hose."

It seems that one, Peter Zyla, was trying to collect for an alleged industrial accident, but the insurance company

(Continued on Page 248)



Upper left, Fig. 1. Right, Fig. 2.

Experiments by an Army Cameraman

By CAPT. THOMAS E. HUNT,

Army Air Corps

"ALL right, print that one," sings out the director. Another scene in the can, but a new set of problems is arising for the cameraman. Maybe it's a simple close-up to match the last medium shot, maybe it's a new and simple set to light, or maybe it's a complicated set requiring deep transparent shadows and brilliant bright lights. Whatever it may be, it will be approached in as many different ways as there are cameramen as each has his own method. Some call on their long experience to okay their set-up. Some use a meter to check. Some use both.

Photographic problems are not so serious in the professional motion picture studios as they are in the photographic departments of the present war-time army where you do not have either the time or the equipment of a studio to figure them out.

It was while I was stationed at Wright Field, where for a time I was head of the photography department, that I learned we would have to figure out a lot of problems for ourselves. One of these problems was keeping as accurate control as possible over difficult scenes. Searching for such control started me on a series of experiments. Several different ideas were tested and eliminated until one idea was found that seemed to have merit. Tests proved that the following method of control will work and give the photographer a reasonable accurate control over difficult

scenes. Unfortunately, I was forced to stop before exhaustive tests could be made and as it seemed that there would be no opportunity to complete the experiments because of the lack of time and equipment, I decided to pass on the idea so that anyone who was interested could carry on their own tests.

As stated before, the purpose of the following article is to show one method of keeping a constant control over the set lighting so that all scenes will print in the close vicinity of one predetermined light. Under normal conditions, this is not difficult for a good photographer. However, it is for the abnormal or extreme conditions that this system was devised, and it is offered for what it is worth.

Every photographer knows that an exposure meter is not an open sesame to good exposure. On the contrary, it is merely a guide and as helpful as the photographer makes it. So it can be said about this method of scene control. It will serve as a guide to the cameraman and not as a set of hardfast rules. For example, later the statement is made that a key of 150 foot candles was found to be correct. It was correct for the test subject and for normal conditions as a person with average skin was selected for the test. However, it may not be correct for a girl with very light skin tones or a "heavy" with a dark complexion. If the photographer knows that a key of 150 foot candles is correct for

normal conditions, then for lighter complexions, he may want to drop down, say to 125, or in the case of dark complexions, may raise his key to 175 or 200. The point is that when he knows what normal conditions are, then when he is confronted with abnormal conditions he has a starting point on which to base his decision. Therefore, when the reader studies the following, let him keep in mind that this system is not a set of hardfast rules but a guide that will lead him to a better understanding of a mechanical means of checking light balance.

Hunter and Driffeld found that if densities are plotted against the logarithms of exposure, a characteristic curve results. This curve, known as H and D curve, varies with development and the type of emulsion.

A study of Figure No. 1 will show that the characteristic curve of a typical motion picture film starts out at the bottom as a curve, then goes into a straight line and then into another curve. The point between A and B is known as the straight line portion of the H and D curve and represents that portion of the film densities that is normally used. Any image placed by exposure on the straight line will be reproduced faithfully on the positive. An image placed on the curve between A and U will be underexposed (i.e., so thin it can't be printed, as shown by the gray scale in Figure No. 1) and conversely, any image placed on the curve between B and O will be too dense or overexposed.

Let's assume that the average 35mm. film has a tone range of 1/128. This means that the film will record from white to black in 128 steps. However, these tones will be recorded on the film in a geometric progression as 1 - 2 - 4 - 8 - 16 - 32 - 64 - 128. Let us assume that the lowest Weston reflected reading on a set is 6.5 and the highest reading is 50. This is a scene brightness or tone ratio of $\frac{6.5}{50}$ or approximately 1 - 8.

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Making the Most of Summer Movies

By JAMES R. OSWALD



Even in rugged terrain like this, a tripod is essential for rock-steady pictures.

THESE are the days when every red-blooded individual is beckoned by the great outdoors to forget the woes of winter, lay aside the gin rummy, don some summer sportswear, and "hit the road" to new adventure. In normal times this might mean getting out the old fishing tackle, purchasing that new fly rod, and retreating to that peaceful trout stream in the North Woods. It might also mean knocking off a week or two from the office, packing some luggage in the family car, and hitting the trail for the mountains, the seashore, or maybe just a restful stay on the farm. This year, however, because of manpower shortages, gasoline rationing, and one thing another, these distant trips are going to remain just "day dreams" to most of us, for the time being, to be appreciated and looked forward to all the more when they can be realized. But these restrictions need not prevent one from taking a short, week end jaunt to the country for a little fun and relaxation. Even an "A" card holder, with careful planning, can afford to take such trips.

To every real "dyed-in-the-wool" movie fan, the cine camera is an essential part of the luggage on any journey, whether it be a cross-country excursion or merely a Sunday afternoon's outing. In capturing the highlights of their adventures on film, those who take full advantage of their picture taking opportunities will have more than just pleasant memories of these happy occasions. That's why such filming is a "must" for every alert movie maker.

In view of the fact that vacation time is here, and even the casual filmer is taking his cine camera down from the shelf, dusting it off, and preparing to do his summer shooting, it might be well at this time to go over some of the "dos" and "don'ts" of home movie making, in an attempt to avoid those old pitfalls which were resolved to be overcome in this year's filming.

Dispensing with the more fundamental requirements of good movies, including proper threading of the film, which is amply explained in the camera's instruction manual, and correct exposure, which is simplified by the use of various guides or an exposure meter, the thing that ranks next in importance is steadiness . . . steadiness assured by a tripod, not by a seemingly firm hand. Jumpy

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The local park or zoo offers more possibilities, without traveling great distances.



A yellow filter makes possible cloud scenes such as this one. For dramatic, stormy effects, a red filter emphasizes the clouds still more.



The city's bright spots also provide interesting shooting after dark.



Sunsets are an old favorite for cloud lovers. Here again a filter should be used to bring out all the beauty of the scene.



Picnic gatherings should not be overlooked as worthwhile movie material right near home.



Scenes like this lack sufficient action to make a good movie. They are better reserved for snapshot albums.

Movie Tricks Explained

By PHIL TANNURA, A.S.C.

EVERY time I talk with an amateur movie maker he invariably winds up by asking how he can do various tricks with his camera to obtain the same results he so frequently sees in professional pictures on the screen. Contrary to general belief, many of the camera tricks are quite simple to do—if you know how.

The editor of the American Cinematographer asked me to explain a few tricks for the readers of the magazine. So, here are a few which I hope will be helpful to all home movie makers. If the readers find these are useful, from time to time I shall try to tell you more.

Reverse Action

One of the easiest of all camera tricks—and one of most help for slapstick comedy—is reverse action in which everything appears to happen in reverse: men run backward, automobiles glide ghostlike backwards around a curve through traffic, or water comes out of a glass into a pitcher.

If you have a camera with a crank, you get this reverse result by cranking the film backwards. If you have a spring-driven camera you simply hold the camera upside-down when shooting. Then after your film is developed, cut out the scene and replace it in the reel right side up. You do this by turning it end for end.

Simple, isn't it?

I recommend this only in the case of 16mm, and not for 8mm, because the smaller film has only one row of sprocket holes when ready for projection, and when the film is reversed end-for-end the emulsion side is turned away from the lens and throws the picture out of focus.

Making People Disappear

Another simple, yet effective, trick is stopping the camera to make people and inanimate objects appear and disappear.

Never try to do this unless you have your camera on a tripod. It is also important that you have as near static a background as possible, and for your actors to hold a given position while the camera is stopped.

In achieving this effect you film your scene normally up to the point where you want a person or object to vanish or appear. At that point you tell your players to "freeze" in their positions as you stop your camera. While the camera is stopped you remove whatever you wish to vanish. Then you continue the normal filming of your scene.



Much fun can be obtained by the substitution of one object for another, such as replacing a cup of tea with a bottle of beer, or a Ford sedan for a Rolls Royce. Try it out and you will have real fun after you have practiced it a few times.

Bombing Effects

In these days of war and air raids, some ambitious amateur may want to make a war picture showing the effect of a bomb or other explosion in a house. This can be done with a minimum of danger to your furniture and with great screen effectiveness without wrecking your room.

Just place a metal pan on the floor close in front of the camera. In the pan put a little old-fashioned flash powder. When you are ready for your explosion ignite the flash powder. When the smoke from the powder has obscured the camera's view, stop the camera. Then you scatter the furniture around to suit your fancy. Break lamps or glassware, or do what you want. When your room suits you, ignite some more flash powder in the pan, and as the smoke is clearing resume filming. On the screen you will

see the flash of an explosion, a huge cloud of smoke, followed by a wrecked room. It's really very simple.

Distortion

If you wish to get a shot of a scene or individual slowly becoming blurred and distorted you do it this way.

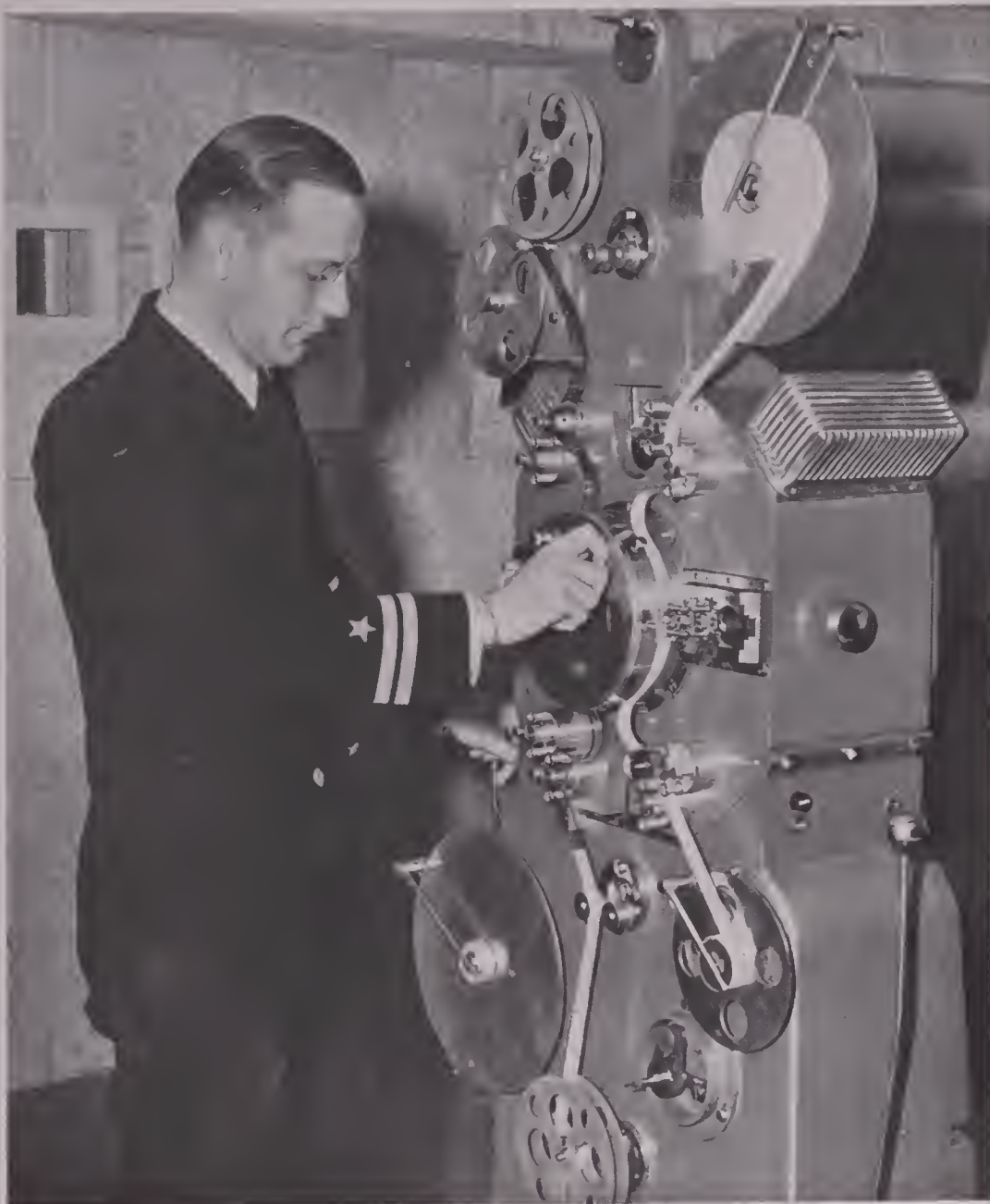
Put a piece of optically flat glass (the type good filters are made of) in your filter holder or matte box. Start shooting your scene normally through this glass. When you want the distortion to start you simply spread some warm sweet oil along the top of the piece of glass and continue filming. The oil will flow down over the glass and as it does the scene becomes more and more distorted.

Some excellent nightmare scenes, or scenes such as an inebriated gentleman might see, can be obtained in this simple manner.

Making a Train Wreck

If you would like to make a picture of a railroad train leaving the tracks you can do it quite easily—and without wrecking the train.

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Left, Lt. Gordon Chambers of the Photo Science Laboratory, Bureau of Aeronautics, U.S.N., examining the new optical printer developed by Irving D. Dyatt Productions.

A New 16mm Optical Printer

By JACK HARTLINE

UP IN Corvallis, Oregon, a new high precision 16mm. optical printer has recently been unveiled by Irving B. Dyatt Productions.

Mr. Dyatt, who operates a combined motion picture production unit and research laboratory, has spent the past two and a half years studying the needs of processors in the 16mm. field, and the printer incorporates features and refinements suggested by processors and laboratories in all parts of the country.

Originally developed to make color-corrected Kodachrome master prints, the printer is a versatile machine with a wide variety of features. In addition to straight optical printing, with light correction, it may also be used for contact printing, either step or continuous; simultaneous double printing; traveling mats; and special effects.

Perhaps the most interesting feature of the printer is its principle of radial or rotary motion. Negative and raw stock travel on opposite sides of a circular assembly, making possible the absolute focus necessary to perfect optical printing. Since both films run through comparatively long radial channels, side motion and "whipping" are eliminated without any harmful "pinching" of the film edge.

The pull-down mechanism is concentric with the arc of the film track, thus preventing any possibility of damage to sprocket holes. Negative and raw stock are engaged simultaneously by cam-operated pins on opposite sides of the same rocker arm.

Accuracy of registration is provided by the pilot pin assemblies. Either two or four pins may be used on each side

for single- or double-perforated film, and interchangeable pins are provided to accommodate the slight variations in sprocket hole dimensions of film from various manufacturers. In contact printing, the pins enter from the raw stock side, thereby overcoming any shrinkage of the processed negative.

The pressure plate assembly is designed for simple and accurate threading. Framelines may be corrected by precision built masks operated by convenient knurled knobs at either side of the printer assembly.

Light source for optical printing is a 1000-watt lamp housed behind the printer assembly and cooled by a blower with a capacity of 650 cubic feet per minute. Separate air ducts are provided to cool the printer mechanism.

Light intensity is controlled by a galvanometer and enters the film aperture from a highly accurate front surface mirror. Duplicate lamp assemblies are provided so that light may be introduced from either side.

For straight contact printing, the lens assembly is removed and a light source placed at the center of the radial printing assembly. This evenly illuminates both apertures, making it possible to print simultaneously from both sides, from either one or two negatives, depending on how the machine is threaded.

In double or special effect printing, the negative (or Kodachrome original) is threaded in contact with the raw stock at one side of the machine while a second negative or mat is threaded through the opposite side.

Light control switches are integral with the sprockets feeding the film from the reel to the printer, eliminating the need for extra loops or sprockets. Threading is simple and fool-proof. The film is simply looped over the sprocket between idlers and a shoe swung into place. Take-up reels operate on the slipping belt principle.

To insure the extreme accuracy demanded by present day professional 16mm. work, the machine has been built to the highest standards of optical and mechanical precision. All important mechanical parts are held to a tolerance of not more than .0002", and the pilot pin and pull-down assemblies to .0001". The main body of the printer is constructed of meehanite, aged eight months and normalized three times. Front and back surfaces are ground to parallelism within .0005". Gears, which run in a bath of oil circulated by a gear-driven pump are centered to an accuracy within .0005".

A special model for 35 to 16mm. reduction or 16-to-35 enlargement is also in production. Except for modification of one side of the printer to accommodate 35mm. film, its operation is identical with that of the 16-to-16 model. The double lamp assembly feature makes it possible to change over from reduction to enlargement by simply using the other light source.

Experiments by an Army Cameraman

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These tones can be placed on the straight line portion of the curve in a number of different places. Remembering our geometric progression, we find that these tones can be expressed as 1-8, 2-16, 4-32, 8-64, or 16-128. A stopped-down lens will use the 1-8 portion of the straight line. If it is opened up more, it will use the 2-16 part of the curve, and so forth until the 8-64 and the 16-128 sections are used. Analyzing this we find that with a brightness ratio of 1-8, five different lens stops will give a printable negative. The 1-8 negative will print on one of the lower lights, say 1 to 5, and the 16-128 ratio will print on one of the higher lights, say 16 to 21. To put this in different terms, the 1-8, 2-16 ratios, etc., can be expressed in terms of Weston readings as 1.6-13, 3.2-25, 6.5-50, 13-100, etc.

If the scene contrast is Weston reflected $\frac{3.2}{1.6}$ (1-64), the exposure must be 200

more exact as this ratio will fit into the straight line portion in only two spots, 1-64 or 2-128. However, if the scene is lighted so that the lowest reflected reading is 1.6 and the highest highlight has a reflected reading of 200, then the exposure must be perfect as the ratio here is 1-128 and it will fit into the straight line portion in only one place. A slight underexposure will place part of the tones in the toe of the curve between A and C resulting in a negative with some of its shadows going black. A slight overexposure will place some of the tones in the shoulder between B and O resulting in a negative having the brightest highlights blocked up. A study of the gray scale in Figure 2 illustrates this point. It is for scenes of this type in which the entire tone range of the film must be used that a good system of exposure control is mandatory.

Now study Figure No. 1. If the cameraman can so judge his exposure so as to place the middle tones at M, which is the middle of the straight line, he will be able to work from the middle out. He will have the area from M to B to place his highlights, and the area from M to A for the shadows. Let's see how this can be done.

As mentioned before, the characteristics of the H and D curve depends on the film, the development, exposure, and the amount of light. All of these are variables, and the changing of any of these will result in a change in the final positive print. However, we can assume that when shooting only one type of film will be used and at only one stop, say f 2.8. As the modern day labs always strive to develop to a constant gamma, we can disregard this factor. Therefore,

of the four variables, film, exposure, development, and light intensity, we have crossed out three as being constants, leaving one variable which is the intensity of the light falling on the subject which in turn creates the different densities on the film.

As mentioned before, the laboratory technicians determine the H and D curve by plotting the logarithms of exposure against the densities of the film. This is of no practical use to a cameraman, so the next problem is to be able to plot these densities against some factor that will help the cameraman in his work. Experiments proved that these densities can be plotted in terms of Weston reflected readings or Incident readings in foot candles. When this is accomplished, we can obtain the limits of a particular film at a particular stop and development, so that the cameraman will have a basis for judging the amount of light to place on the set. In other words, we are trying to determine a method by which the cameraman can keep in a straight line portion AB shown in Figure No. 1.

The method used here to determine this was to set up and photograph a white card, using the film and the stop normally used by the cameraman. Plus X Film at f 2.8 was used in these experiments. This particular emulsion happened to be one stop slow, so cameramen trying this with fresh film will obtain slightly different results. A card with a matte surface was used as it gives a more even reflected light than one with a glossy surface. The camera was placed so that the white card filled the frame. Next, a light was placed in order to get a .8 Weston reflected reading from the white card. At the same time, the incident reading of this light was obtained. This was slated and the camera started. The minute it was up to speed it was stopped as only one frame of exposed film is necessary. The light was then moved in until the reflected reading of 1.6 was obtained off the card. This again was photographed. The light was then moved in until a 3.2 Weston reflected reading was obtained and this too was photographed. Each time the light was moved in until reflected readings of 13, 25, 50, 100, 200, and 400 had been photographed. Each time the incident reading of each light was noted and recorded.

The results gave a negative having a very slight density starting at a reflected reading of .8 progressing up to a very heavy density at Weston 400 reflected. The average density of one frame from each of the series was read on a densimeter and plotted against the Weston reflected readings as shown in Figure No. 2. Be sure to read a frame that was exposed after the camera was up to speed. Next, the straight line portion AB was determined, and a line dropped down from A and B to give the limits of the film in terms of Weston reflected readings. In this particular case, the limits of the film run from a low reading halfway between 1.6 and 3.2 to the high read-

ing halfway between 100 and 200 Weston. For convenience sake, we will call these readings $13\frac{1}{2}$ and $100\frac{1}{2}$. In other words, any white surface photographed with a minimum reflected reading of $1.6\frac{1}{2}$ to a maximum reflected reading of $100\frac{1}{2}$ will be on the straight line portion of the film. But dropping down from M, we find that a reflected reading of $13\frac{1}{2}$ will place tones in the middle of the straight line portion of the curve.

The next problem is to determine the correct intensity for the average key light. In order to determine the key, a subject whose face had average coloring was placed in front of the camera. Using the same film and stop as used in the other experiment, he was photographed. No fill or back light was used. First a key light of 64 foot candles, (only one light is used) or any other low key that the cameraman wishes to start with, is used. In these particular experiments, keys of 64, 100, 125, 150, 200, and 250 foot candles were used, as read by a De Zur meter. Each time using a Weston meter the reflected reading of the face was taken. The film was developed and all the scenes printed on the predetermined light. In these experiments, light 14. The print was projected and the key that gave the best tones to the subject's face was selected. In this case, the 150 foot candle key was the best. The Weston reflected reading of the subject's face was found to be between 13 and 25 with a key of 150 foot candles across the face. Referring back to Figure No. 2, you will see that M, the middle of the straight line, has a Weston reflected reading of $13\frac{1}{2}$. This bears out the contention that the tones of the human face normally fall in the middle of the straight line portion.

Now for the practical use of this. When photographing a set we know that if using the same film and F stop as in our experiments if we place a key of 150 foot candles on a subject's face we have placed our middle tones in the middle of the straight line portion and can be assured of our negative printing on the predetermined light as mentioned before—light 14. This gives us a starting point. Let's assume a scene in a large deep cellar with light concrete walls in which a shaft of sunlight is shining through a high window, illuminating a small portion of the set but leaving the rest of it in deep shadows. An actor is in a corner at a table and his face is illuminated by a lamp on the table. The corners of the room are to be held as dark as possible, but with still enough light throughout so that its features are barely distinguishable.

Referring to Figure No. 2, we see that if the lightest highlight is just under B, it is on the straight line portion. Dropping down to the incident readings on the scale, we find that an incident reading of about 300 foot candles will put this highlight just under the shoulder

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THROUGH the EDITOR'S FINDER

JUST a year ago this month I was called in to edit the August issue of the CINEMATOGRAPHER when William Stull passed on very suddenly. At that time I had no idea I would continue editing the magazine, for I was swamped with my own Public Relations business and was compelled to work nights and Sundays to meet the press deadline.

But here is my twelfth magazine, and I must say I have enjoyed the editorial task. Editing a magazine is an exciting adventure, for the Editor never knows whether the contents of the magazine will please or displease its readers. He has to follow the current trends, guess what the readers want, and then try to get it. And in these days of war he is faced with the problems of lack of manpower in the engraving and printing plants. Finally, he must please the owners and publishers of the magazine.

From all parts of the world I have received scores of letters from subscribers that have made me very happy. Strange as it may seem, only one subscriber has complained about editorial content in the last twelve months. For those kindly letters I thank you, one and all. I only hope that the future issues of the magazine will continue to please you.

AS this is being written thousands of American boys are offering their lives in Normandy in the fight against a way of life that a former paper hanger has tried to inflict upon an entire world . . . a way of life that does not meet with the Democratic system which has been ours since the founding of the United States of America.

As this is being written other thousands of American boys are spilling their blood in the South Pacific to prevent the war lords of uncivilized Japan from inflicting their way of life upon us and the peoples of the Far East.

As this is being written politicians are girding their loins for a convention at which they will nominate a man to run for the office of President and one for Vice-President of these United States. When the Republican convention is over there will follow the Democratic convention. And then will follow the battle on the "home front". A battle for what? For the destruction of Hitlerism? For the destruction of Japan? For the freedom of small nations to be independent? For the right of every man, woman and child in the world to freedom of worship, speech, thought and want?

I wish I could say "yes" in answer to each of the above questions. But I cannot. Judging from the speeches I hear over the radio, and by statements issued by the politicians in whose hands are the destiny of our country, the battle will be for a political party. The Democrats want to remain in power, and the Republicans want to take their places.

In Germany and Japan the verbal attacks of each party upon the other will serve as builders of morale. A German city will be wrecked by American bombs, but the people will take comfort in the fact that there is strife and dissention on the American home front. The Allied Nations have confidence in the American government with which they have been cooperating. We are winning this war, and our Allies have faith in our leaders. But will that faith be so great once the politicians start telling the world that our leaders are doing a bad job; that they should be replaced by Republicans who will do the job right?

I am holding no brief for the party now in control. My interest is in the winning of the war and the wiping out of the way of life that our enemies want to inflict upon us. My interest is in those American boys who are dying, losing their legs, hands and eyes on the land, the sea and in the air so that America and the world may enjoy that freedom to which every human being is entitled.

And so my heart grieves when I see politics assuming more importance than the war in this great Democracy. True, because this is a democracy we have the right to bring up political issues at home while our boys are dying on the field of battle. But my simple brain cannot understand men who wish to take time out at a period such as this to further the cause of a political party.

Were those boys, wading ashore amid a hail of bullets on the beaches of France, fighting for a political party? Were those paratroopers who landed behind the German lines doing it for the Democratic or Republican parties? Were those boys, who crawled through the stinking jungles and mud of South Pacific islands, battling for Roosevelt or Wilkie or Dewey or Bricker?

No, thank God. They were fighting for America.

Let us hope that the political leaders in the coming campaign will be like our boys in the service—that they will fight, not for political office and soft political jobs, but for the United States of America.—H. H.



1944——

This year marks
The Fifteenth Anniversary
Of the first public showing of
Motion Pictures —

EASTMAN FILMS

brought these first pictures to the screen —

EASTMAN RESEARCH

is responsible for the vital and progressive
improvements in motion picture films
and emulsions ever since ——

There can be
NO SUBSTITUTE
FOR EXPERIENCE ——

There can be
only ONE BEST
in motion picture films ——

EASTMAN

J. E. BRULATOUR, Inc.
Distributors

AMONG THE MOVIE CLUBS

Rasch the Winner

After nearly a year of planning, the first Inter-Club contest between the 8-16 Movie Club of Philadelphia and the Philadelphia Cinema Club was held on the evening of June 13th.

Four films were entered in the contest. The winner was "Tally Ho," a picture of activities at a famous hunt club by A. L. O. Rasch of the Philadelphia Cinema Club. Mr. Rasch received a silver cup. All entries were in Kodachrome with recorded sound.

Pocatello Club

The third meeting of the Pocatello, Idaho, Camera Club was held on June 5. A Constitution and By-Laws were adopted and officers and members of the Board of Directors were elected.

Officers elected were: J. A. Tolman, President; T. H. Gathe, Jr., Secretary-Treasurer. Members of the Board of Directors chosen were: Evelyn Enenback, Dr. E. V. Simison, Frank Disdier and Y. D. Black. President Tolman appointed the following as a Program Committee for the next meeting: Evelyn Enenback, R. E. Brown and George Long.

Grand Rapids Club

The Grand Rapids Amateur Movie Club of Grand Rapids, Mich., has inaugurated a service that should make many fathers in the Armed Services happy. Club members are making movies of babies born while their fathers have been overseas. Scenes usually include baby being weighed, bathed, playing, retiring and a view of the youngster fast asleep.

The film is shown to the proud mother and other members of the family, and is then shipped overseas to the father. The family furnishes the film and the club shoots the pictures and has them processed.

New York Eight

Two hundred and fifty 8mm. enthusiasts gathered in the Salle Moderne of the Hotel Pennsylvania, New York City, for the Guest Night of the New York City Eight Millimeter Motion Picture Club. It was the most successful event the club has ever staged, with the guest list reading like the social register of 8mm. filmmakers.

The program opened with "Home Movies", a satire on the nuts and bolts of moviedom. This was followed by "Shell Hunt". Next came "Kid-napped", "Canadian Holiday", "Ten Pretty Girls" and "V—for Vacation".

Long Beach Anniversary

The Long Beach Cinema Club celebrated its 7th anniversary with a gala meeting the first Wednesday of June. The program consisted of "Horseback Holiday", "Vacation Wonderland", "An Ancient Art", a newsreel and the premiere of "Unexpected Escort".

Members have been invited to bring their equipment to the next meeting to shoot a story which will be complete with titles in one roll. This will be a "school" meeting for members who want the experience before taking part in the annual outdoor picture.

Another 7th Anniversary

On Monday evening, June 19th, members and guests of the La Casa Movie Club of Alhambra, California, celebrated the 7th Anniversary of the founding of the club. A total of 14 films were screened on the gala occasion. Eight of these were 8mm. pictures, five were 16mm. and one was 35mm.

Films shown were: "Yosemite", "Kellogg Arabian Horses", "Reno Vacation", "Cavalcade of the West", "California", "Good Old Days", "Mesa Verde National Park", "Cow Branding", "Yosemite" (another version), "Death Valley", "Pinto Ponies", "Griffith Park Zoo", "Flowers" and "Africa", the 35mm. special.

San Francisco Club

Highlighting the June meeting of the Cinema Club of San Francisco was a showing by Miss Gladys Broderson of Kodachrome slides of the Supai Valley in the Grand Canyon country. This is the Havasupai Indian Reservation, through which Cataract Creek flows to join the Colorado.

At the same meeting "Russian Easter," a 900-foot Kodachrome subject by George W. Serebrykoff, was screened. The theme of the picture is Easter in Nature, the Church and the Home, centering around the little Church of Alexander Nevsky in New Jersey.

Club members had so much fun on their recent Zoo Field Trip that they are now contemplating a field trip to Mt. Tamalpais.

Utah Cine Arts Club

The June meeting of the Utah Cine Arts Club proved unusually interesting. Martin Strom presented "My Trip Through McKinley Ward," and Kermit Fullmer gave a Parallax Demonstration. There was splicing practice for members, and the evening was completed with the showing of two color films on Mexico, "Yucatan" and "Mexican Moods."

Santa Ana Club

Fifty-two members of the 8-16 Movie Makers Club of Santa Ana, Calif., attended the June meeting which was just a bit unique. The meeting opened with a "pot-luck" dinner. A meat dish was served by the club, but members had to bring the rest of the meal.

After dinner and dish-washing a three-reel subject, "Rice," was screened. It is the life story of a Korean peasant, and was furnished the club by the AMERICAN CINEMATOGRAPHER.

Westwood Movie Club

The Executive Committee of the Westwood Movie Club has announced that the club will hold its third annual Gadget Exposition on Friday evening, Sept. 29, at the club headquarters, St. Francis Community Hall, San Fernando and Ocean Avenue, San Francisco, Calif.

A temporary committee has been set up to organize plans for the event. Clyde Wortman is Exposition Chairman. Assisting him are Edna Spree, Eric Unmack, Joe Pissott, Don Campbell and Jesse Richardson.

Los Angeles Cinema Club

The June meeting of the Los Angeles Cinema Club was held in the Bell & Howell auditorium, 716 No. La Brea, Hollywood, and included the showing of two films and a collection of Kodachrome slides.

Pictures screened were: "Autumn in California", a Kodachrome subject by William L. Easley, and "Eighteenth Century Life in Williamsburg, Virginia", a rare Kodachrome Documentary film of great charm. It was furnished by the Eastman Kodak Company. The slides shown were of California flowers, and were made by Lester J. Turley.

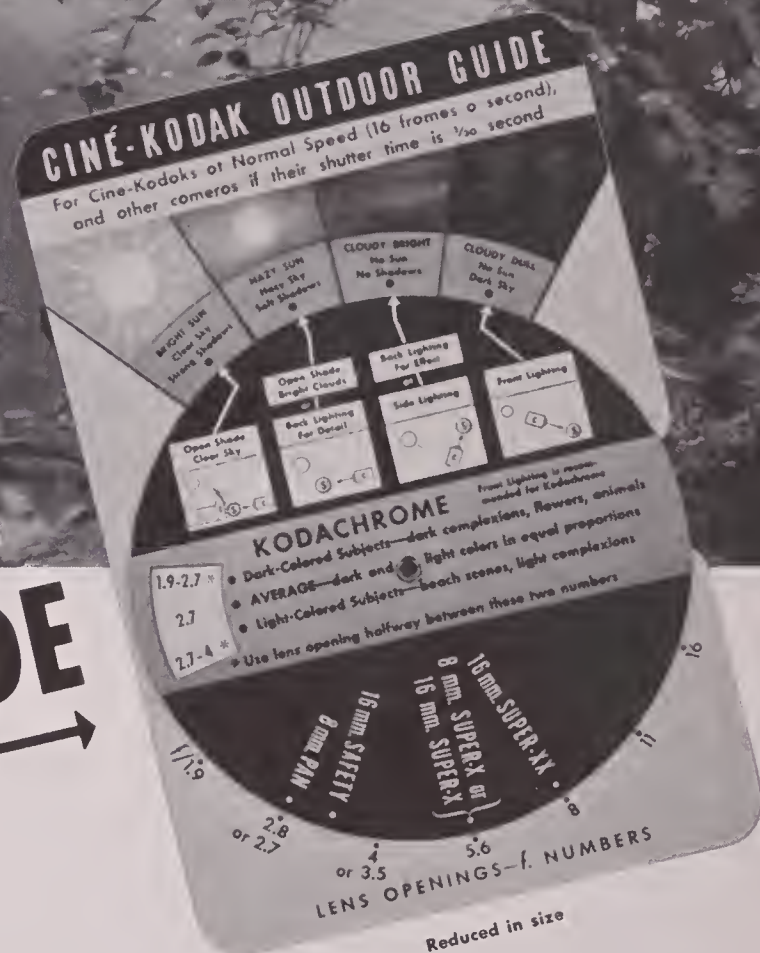
M. M. P. C.

The Board of Directors of the Metropolitan Motion Picture Club has unanimously re-elected the entire panel of club officers for another year. They are: Leo J. Heffernan, President; Joseph J. Harley, 1st Vice-President; Frank E. Gunnell, 2nd Vice-President; Alice L. Burnett, Secretary, and Sidney Moritz, Treasurer.

The club's June meeting was held in the Walnut Room of the Hotel Capitol, New York City. Three films featured the meeting. They were "Sport Film" by Edwin Roth; "Sternwheeler Odyssey" by Sidney Moritz, and "Swinquette" by Mrs. Ford R. Jessop.



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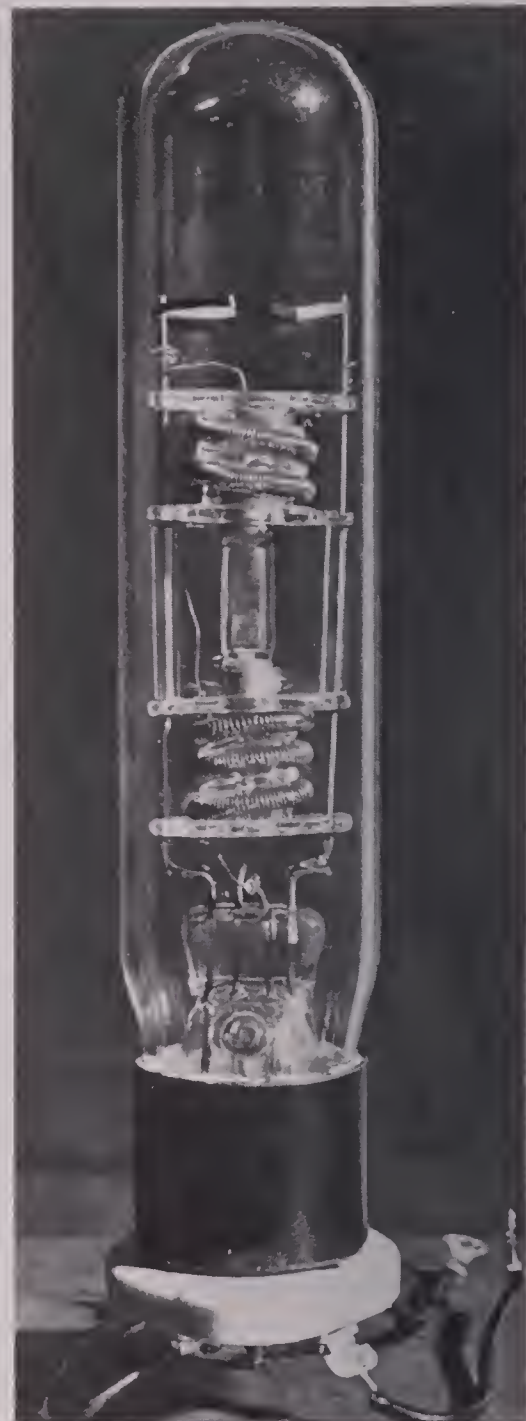
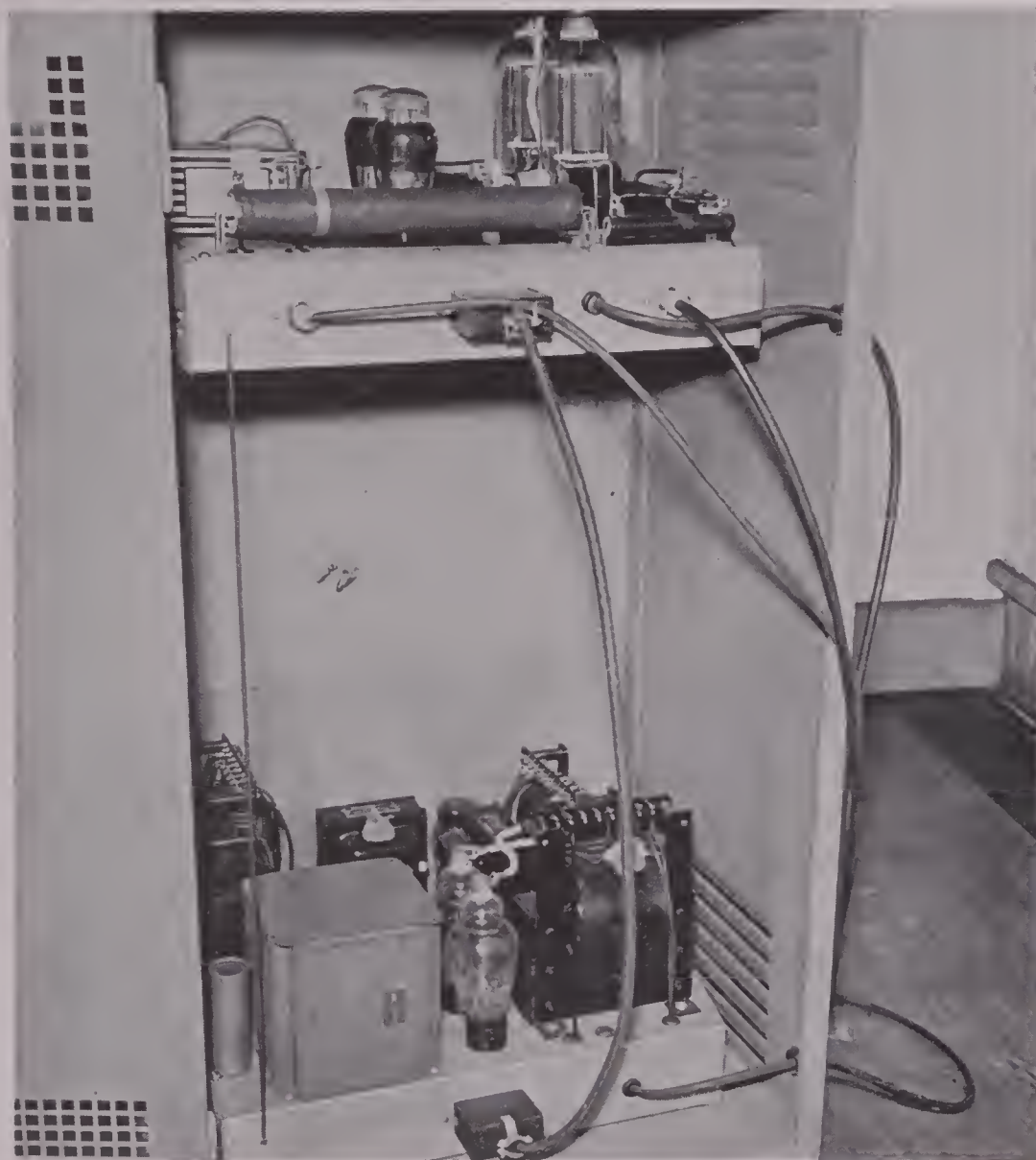
Kodak Film Guide: Film speeds, meter settings, code notches, spectrograms, color rendering, and filter factors for Kodak roll films, including 35-mm. and Bantam, for packs, and for sheet films. 10c.

Eastman Paper Kodaguide: Gives the relative speeds of papers, selection of contrast, image tone, safelight, developing, and toning data. 10c.

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New Mercury Vapor Lamp Announced



Above, new type of mercury arc lamp. Left, electronic control apparatus housed in a cabinet. This is used with modulating light in motion picture film and photofinishing processes.

A NEW modulating light consisting of a high-pressure mercury vapor lamp with associated controls has been developed in the research laboratory of Hanovia Chemical and Manufacturing Company, Newark, New Jersey, after three years of experiments.

The new light, for which patent application has been filed, provides "a perfectly steady light as a source for printing sound track on film." The associated controls, it is announced, "automatically adjust the light intensity to various levels for the printing of photographic films, especially those used in motion pictures."

Created on demand of the motion picture industry, the new device has other applications in the fields of photofinishing and of processing microfilm, where a steady light source whose intensity can be readily controlled is a definite requirement.

Credited with the development work is Lester F. Bird of the Hanovia Laboratory. Bird perfected new circuits for the control apparatus, working under license on patents previously obtained by James R. Balsley, consulting engineer

of Stamford, Connecticut. Bird also developed a new type of mercury arc lamp operating on 85 watts input with specially designed heater coil to permit operation within a wide intensity range of from one to ten. This device replaces incandescent lamps previously used which are much less efficient in the photoactinic range and produce a hissing sound on film track, according to Bird.

Bird explains that the light with its associated controls provides more light output per watt input than was previously possible and thus insures greater efficiency for photographic purposes. The added heaters prevent the mercury vapor pressure from falling off while the lamp is being operated on low intensity. It thus becomes possible to increase the intensity from low levels to maximum output, practically without any time delay. So flexible is this light that it can be changed instantaneously from low to high intensities and vice versa.

Electronic control of the light is provided through the use of electronic tubes and photoelectric eye so arranged that film densities automatically change light intensity as required.

Burton Holmes Films To Bell & Howell

The entire library of educational and travel films produced and long distributed by Burton Holmes Films, Inc., of Chicago, has been transferred to the Bell & Howell FILMOSOUND LIBRARY.

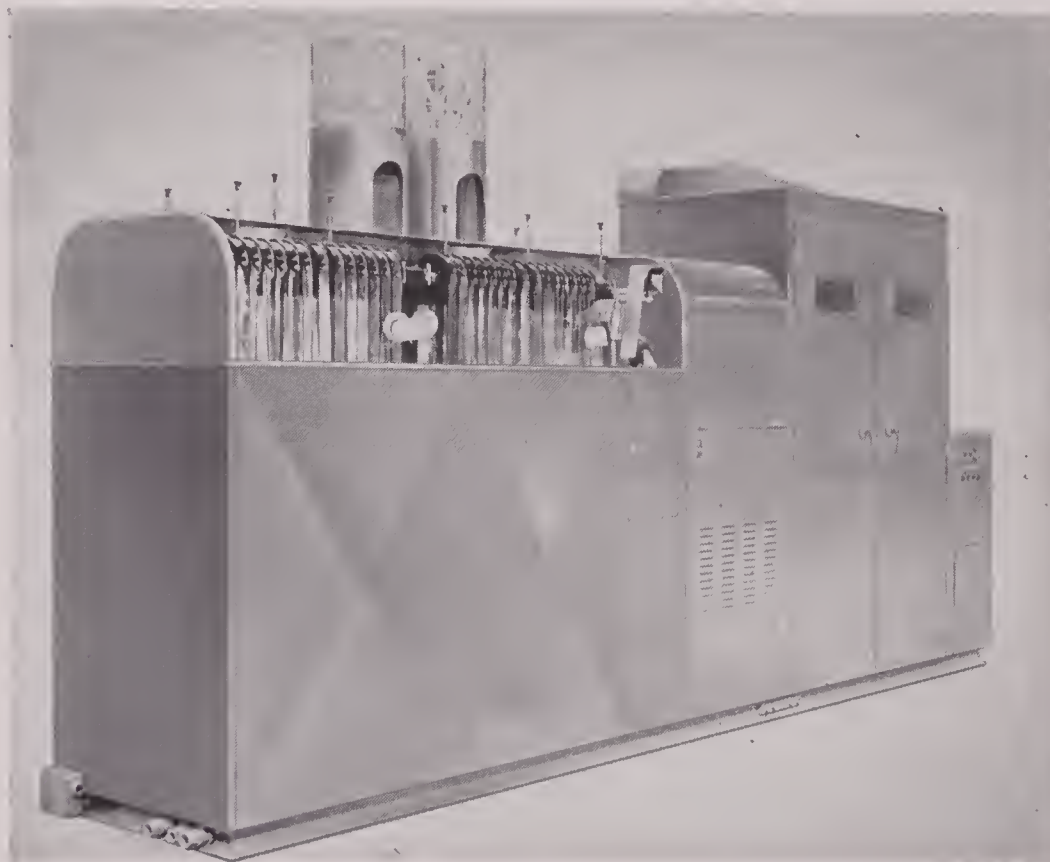
The original negatives, many of them photographed personally by the eminent lecturer, Burton Holmes, on his world travels and explorations, have been put into the custody of the new distributor, and all orders will henceforth be printed from them. Sale and rental prices remain unchanged.

Buy MORE Than BEFORE

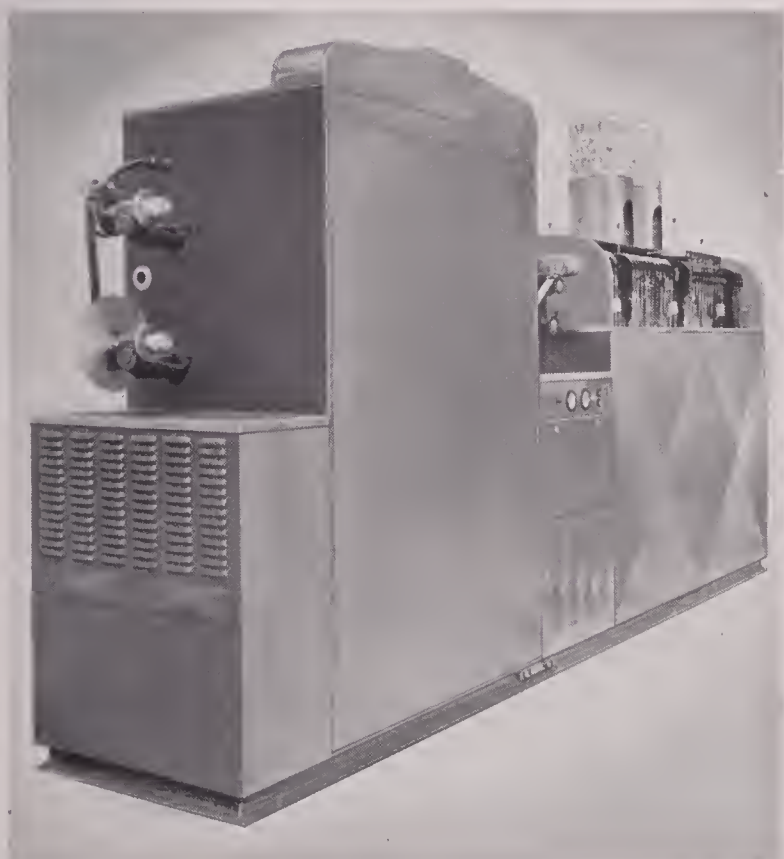
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The Houston 35mm Negative and Positive Developer

This 35 mm. processor is for negative and positive developing. Completely automatic, processing ranges from 6-12 minutes of developing time for negative and 3-6 minutes of developing time for positive. Output 600-1200 feet of negative per hour, 1200-2400 feet of positive per hour.

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Motion Picture Studio and Laboratory Equipment—Developing Machines—Printers—Camera Cranes and Dollies
Miniatures—Mechanical Sets—Engineering and Design Work—General Machine and Jobbing Work

Agricultural Motion Pictures in North Carolina

(Continued from Page 227)

rect sequence, but only rough cut, and shipped to a commercial lab in New York for a one-light positive black and white print.

Upon return of both original Kodachrome and the B. & W. work print, the latter was cut into shape, according to the sketch-script and a few minutes longer than the planned length of the final version. The length of each scene, was written down opposite each sketch and the accumulated time (from the start of the picture) also noted. This schedule is turned over to the specialist to base his narration on and with the general instruction not to figure on more than one hundred words a minute of running time. As often as not, however, it has proved quicker to have the cameraman write the narration himself, as by this time he knows the subject well enough, and merely have the specialist make corrections and suggestions as to the scientific subject matter involved.

The narration is double checked from time to time of course with the projected work print, and after many a hectic session resulting in a little pruning here and a little adding there, the super-final-final version is reached. With this o.k'd by all the other specialists and officials concerned, and the combination sound and work print working smoothly,—the original Kodachrome is taken out of hiding (everyone wants to see it rather than the B. & W. and it practically has to be hid), and matched exactly to the work print. Then it is projected for the second and last time as a double check, and we are ready to score the narration in the usual manner. This we do in a commercial studio in New York.

It might seem easier to write a narration first and then make up a sequence of pictures to fit it exactly. In a pure nuts-and-bolts picture, one dealing purely with method where every action involved can be studied previously and reproduced each time, and where there is no outside continuity to be carried, this may well be possible. But in most other cases it has never turned out to be practical,—there are too many variations between the visualized picture as it is planned in the office and what actually takes place in front of the camera.

There is another reason that is important too,—it originated in Washington. The complaint was made that many agricultural bulletins put out for the nation's farmers used wording that was over the head of the average farm reader. Consequently it was decided right at the start of the program that while the information given in the motion pictures would adhere very closely to that carried in the complementary bulletin, the actual words used would be in as near basic English as was practical. This was most easily effected

by having a person other than the specialist write the narration.

Our picture "Repair It Now," tells of two farmers taking the day off to go hunting. They invite a third to join them but he is busy repairing the combine and straightening up his tool shed, which he proudly shows off. The capers of three "hound" dogs lighten the story and when finally the two hunters turn to go, one of them is conscious-stricken and returns to his own farm to work. Various pieces of equipment and the mistreatment of same are worked into the story which winds up with the day of reckoning for the third man, or villain. The subject of farm machinery did not involve the problems of nature that cropped up elsewhere, (such as the photographing early in the year of corn harvesting, or the availability of a day old calf on a day when the weather was favorable), but being the first picture actually shot, it did point up the number of technical problems that could be expected in future pictures.

"Our Garden" tells the story of a typical farm-family garden and how it is planned, started, and kept producing. The actual family selected had a reputation for always having had an excellent garden, but this year Dame Nature decided otherwise and sent them late frosts, and hail storms and droughts that all but eliminated picture making, and those crops that did mature to any degree of beauty did so when the camera was off on some other assignment.

"Carolina Cows" is a trite phrase for a picture title on dairying, but that latter word is not so easily worked in either. This subject could include so many different angles (clean milk, proper feed, breeding, management of herd, etc.) that it was decided to treat it in a general way. The continuity of the story was carried by two 4-H boys, the elder of whom took in charge a newcomer to the country, showing him around and telling him about dairy farming in different parts of the State.

"Raise 'Em Right" deals with hogs and emphasizes the importance of cleanliness, or sanitation as the expert says. The story tells of a young farmer who decided to follow the advice of his county agent and give up trying to raise "scrubs" (non-pedigree stock) in a small and dirty lot, in favor of investing in a bred-sow purchased from a recognized dealer. The porcine heroine is treated just right according to all recommendations and she emerges with an octette and a grunt of satisfaction. The progeny is shown growing to the stage where some are set aside for breeding, some for fattening for market-sale, and some for home slaughter. As an interesting contrast one of the poor type hogs purchased the previous year is found dead and a pocket knife used in Jack-the-Ripper style leads to an autopsy that shows the tape worms wriggling out of the intestines.

"Can All You Can" is a straight forward canning demonstration showing the use of the pressure cooker and the boiling water bath method. There is no story involved and the pictures were

all made in an actual demonstration kitchen; none of the equipment used however cost over a dollar, although the newly painted walls and cabinets, plus the standard white kitchen tables, did have the effect of glamourizing the set nearly beyond recognition.

"Home Drying" (dehydration) was shot at the same time as the above canning picture and was originally planned as part of it. However the combination of the three food conservation methods would have run the entire picture close to forty minutes, twice as long as any non-entertainment picture should be,—in the writer's opinion at least. The fact that dehydration is not considered to be as good a food conservation practice as canning, was another reason for avoiding the division of interest it would have caused if included in "Can All You Can."

A seventh picture, on backyard poultry raising (for farmers' rather than city folk) is currently being shot and has involved a considerable amount of building with raw timber cut down in the farmer's own woods. This was done not so much because of the shortage of lumber in this part of the country but rather to demonstrate that it was not necessary for a man to put out cold cash for purely practical equipment. In this story, the Extension Service's Poultry Specialist had to take the part of the principal, as the farmer on whose place most of the shots were made was himself crying for help. The shooting of day-old chicks involved some delicate timing due to the hatcheries' one day a week schedule; and the pictures of two sets of birds on range put the motion picture department into the poultry business because of the necessity of buying the chickens of a certain age, shooting the pictures, and then selling the birds on the open market to reduce the expenses incurred. No self respecting poultryman, regardless of how cooperative he might be towards the picture program, would loan his birds if they were to be moved away, due to the possibility of their picking up a disease and bring it back with them.

Other pictures of interest to North Carolina, and in fact all Southern farmers, are being planned and various sequences on widely divergent subjects photographed for stock use. The distribution of these pictures is handled by the Extension Service Staff in conjunction with agricultural organizations throughout the State. There are sound projectors in nearly every fair sized community and money for scores of other machines is on the line just waiting for the lifting of wartime restrictions.

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Utah Amateurs Celebrate



Above we see the members and guests of the Utah Amateur Movie Club of Salt Lake City attending the club's Eighth Annual Banquet, at the Lion House Social Centre. Judge J. G. Jeppson was toastmaster, and Dr. S. K. Robbins was chairman of the committee on arrangements. The club has a limited membership, and has many interesting projects under way. Assisting Dr Robbins in arranging the successful affair were Pauline Scott and Mrs. D. H. Cameron, club secretary.

Movie Tricks Explained

(Continued from Page 231)

Set up your camera on a tripod at a spot where you know the train is going to stop, with your camera placed so the engine will fill the frame when the train stops. As the train approaches begin shooting. Then, just as the engine completely fills the frame and stops, you jerk one of the tripod legs suddenly sideways and continue shooting. When you see it on the screen it will look as though the engine had come right off the track.

You can add other shots of the cars, making them look as though they were piling up, too. BUT, remember this: In making these shots you must have your camera at an angle which does not show the ground.

That should be enough tricks to work on for a while. If you have trouble making them work, write me in care of the American Cinematographer and I'll try to straighten you out.

Making the Most of Summer Movies

(Continued from Page 230)

pictures are a major fault of amateur movies and a detriment to otherwise good films. The remedy is so simple that carelessness is the only excuse for this error. It's true that a tripod is a bulky, cumbersome piece of apparatus, but results will far overshadow the little inconvenience caused by its clumsiness.

Those who like to capture those beautiful, fluffy-white cloud formations in their scenic shots (and who doesn't) will want to consider a color filter an essential part of their equipment. A filter acts to cut down on the overabundance of blue light in the sky, permitting the white clouds to register on the film. This balancing of light values is referred to as the *correcting* power of the filter. Since yellow is the complementary color of blue, to which black and white photographic film is especially sensitive, a yellow filter is the appropriate one to use to hold back this excessive blueness of the sky, at the same time allowing other shades to pass through, in varying degrees, thereby recording the scene more nearly as the human eye sees it. The deeper yellow the filter, the more the correction. A red

filter overemphasizes the clouds, creating a dramatic, stormy effect, with deeply darkened sky. Color filters are for use exclusively with the black and white film, in which case they merely render the scene in its true black and white equivalent, so far as color values are concerned. Kodachrome, being a natural color film, requires no special filters at all, except in very rare cases, and then only those prescribed by the manufacturer should be used. Ordinary color filters must never be used with Kodachrome.

It's a common tendency among many to cut scenes short, leaving only a fleeting glimpse of action on the screen, often not recognizable. Likewise, all too frequently film is wasted on shots containing no action whatsoever . . . shots that are better reserved for a snapshot album. Anything worth recording with a movie camera is worth recording the best possible way . . . for the proper length of time . . . from the most advantageous angle.

Keeping these little reminders at hand will go a long way toward improving vacation movies. This is the time to pack the cine camera, chuck a filter or two in the pocket, and not forgetting the tripod, "hit the trail." The great outdoors is beckoning . . . heed the call!

PH-346-A Recording Equipment

(Continued from Page 225)

two motors are on the power panel in the recorder unit. Correct motor speed is indicated by a vibrating reel type tachometer mounted close to the volume indicator meter for the operator's ease in referring to it. Both motors are designed to operate satisfactorily over a voltage range from 18 volts to 25 volts to take care of variations in storage battery conditions.

Sound Track

The equipment as supplied records unilateral variable area sound track conforming to the nominal 35mm. standards with respect to track dimensions and location on the film. As previously suggested later adaptations can be made to produce other types of track as desired. When 35mm. film is used the track is the same as any 35mm. recording using track of this kind. When 16mm. film is used, the track dimensions and location with respect to the adjacent film edge remain the same as for 35mm. film. This choice for the 16mm. film was made to permit the use of 16mm. film on 35mm. reproducing equipment without changing film location, optical systems, etc. It is relatively simple to replace sprockets and rollers in most 35mm. reproducing heads with 16mm. sprockets and rollers having the same approximate diameter dimensions, thus permitting the machine to run the 16mm. film at 90 feet a minute very satisfactorily.

Modulator

The modulator now used in the equipment is the E. M. Berndt Corporation Auricon type galvanometer mounted in a special housing as shown in Figure 6. Noise reduction amounting to 6 DB is attained by a direct current bias of the galvanometer movement. This galvanometer was adopted because of its generally rugged construction and simplicity of operation. Arrangements are made for focusing and lateral adjustment of the light beam without requiring special and complicated optical test equipment. These adjustments may be very readily made in the field in case galvanometer replacement is required.

Space provision is made for the use of other modulator types as future applications of the equipment would probably require studio type modulators. The general design is sufficiently flexible to permit such adaptations to be made.

Amplifier System

The amplifier system is completely contained in one unit. This unit is mounted in the recorder unit in such a manner that it may be readily removed by removing four thumb screws and disconnecting a plug and jack. The unit is suspended on rubber shock absorbers which form a part of the slide mounts which are released when the thumb screws are removed. This removable feature is very important for field maintenance purposes.

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The amplifier is necessarily complex in its operation but normally the man in the field is not supposed to go beyond changing tubes if trouble develops. If this method of correction is insufficient, he can remove the entire amplifier unit and replace it with another.

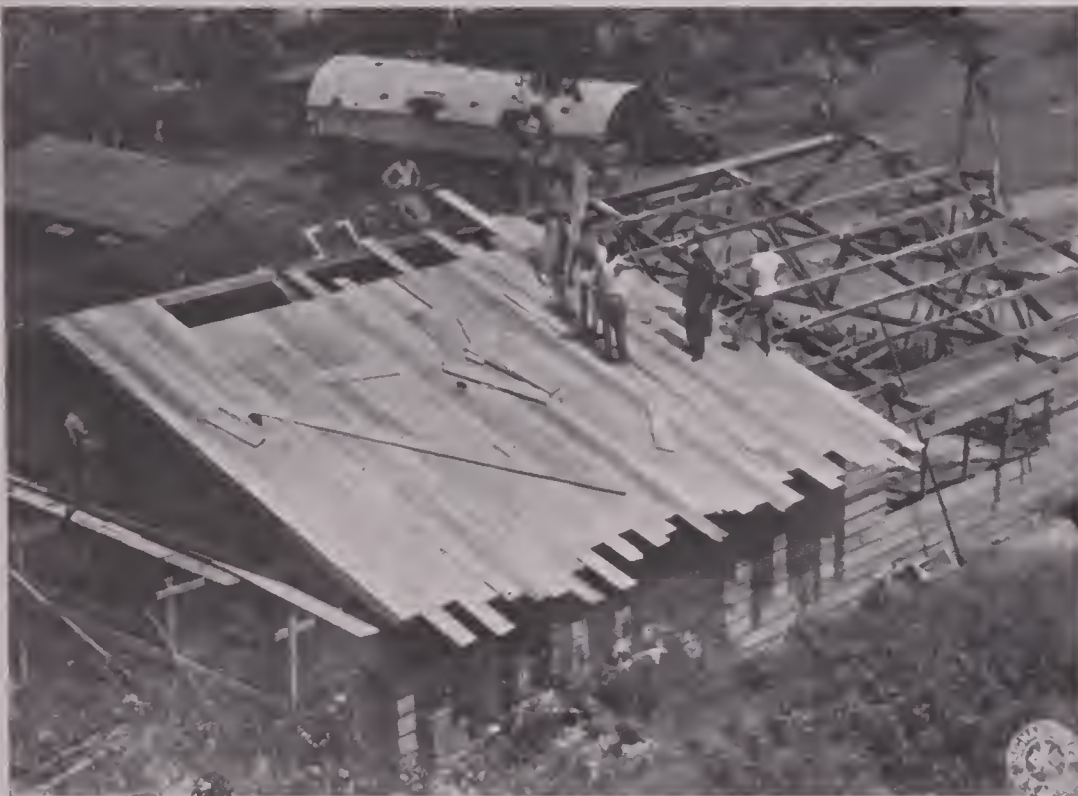
The amplifier assembly contains a mixer for one microphone position, auxiliary gain controls, and a meter which is used interchangeably for checking the various circuit conditions, the recording exciting lamp current, and as a volume indicator or as a limiter indicator. Switches to connect the meter into the various parts of the circuit for its several uses are on the panel and on a

sub panel accessible through a rear door. The normal maximum gain for the amplifier is 110 DB with an additional 15 DB of gain which may be used if necessary, but with a corresponding increase in noise level. This additional 15 DB is used without the increase in noise when the music equalizer is connected for use. The equalizer switch is also mounted on the rear sub panel.

Limiting action is provided in the amplifier corresponding to the type of limiting in normal use in studio recording. The limiting operation is a change in gain which occurs very rapidly (of the order of 1/10,000 second or faster) on

(Continued on Page 247)

Hollywood Men Build South Pacific Lab



WHEN the 4th Signal Photographic Laboratory Unit arrived in the South Pacific recently, the great amount of motion picture film awaiting processing required the Unit to go into immediate operation. Without benefit of the usual precise measurement and control equipment, technician members of the Unit set up a minimum of equipment and were in operation three days after arrival at the overseas destination.

Working under conditions which would grey the hair of the orthodox laboratory technicians, the Unit processed an undisclosed but record amount of film during their first 30 days on New Caledonia. Developing negative in Stine-man tanks, one 100-foot roll at a time, and printing with a modified Bell & Howell printer, film was processed in the hallway of a building made available to the Unit. Most of the work was done at night, because of reduced difficulties with lightproofing, although an army pup tent was pressed into service to cover the printer to permit continuous day and night operation of that equipment.

While one group of technicians was engaged in film processing, the remainder of the Unit temporarily became carpenters and construction men of all sorts, as it was necessary for the Unit to build its own building before going into motion picture production. With the supervisory assistance of a Seabee, a modern laboratory and studio building is now under construction, which upon completion will serve as base center for motion picture activities in the South Pacific area.

Although completely inexperienced in

construction work, the men of the Unit, many of whom have spent their entire adult life as technicians in studios, are putting up a building which will be completely satisfactory for all purposes.

Major Gordon S. Mitchell, on leave of absence as Manager of the Research Council of the Academy of Motion Picture Arts and Sciences, is Commanding Officer of the Unit, assisted by Captain Raymond R. Windmiller, formerly of the Williams Laboratory in Hollywood; M/Sgt. William Claridge of Technicolor in charge of film processing; T/3 Malcolm C. Bulloch, formerly of Paramount, in charge of the editorial department; T/3 Herman H. Fischer, sound recording; M/Sgt. Clarence Perry, equipment maintenance; and Sgt. Frank L. Reed, still pictures.

Film Review

Review of film submitted by C. W. Wade, of North Hollywood, Calif. 200 ft. 8mm. Kodachrome—entitled, “V— For Vacation.”

This film was probably made for a contest in his club, and is an excellent example of a genuine “home movie.” The man and wife wish they could go somewhere, but spend their vacation at home instead, working in the yard, canning fruit, etc.

The scenes are well edited throughout, and assembled in logical continuity. Double exposed main and sub-titles are expertly handled, probably with the assistance of a wind-back attachment. The titles are nicely hand lettered in a legible white, large enough letters, well worded

and centered, and not too long. The uniform sub-titles are cleverly double-exposed over a Liberty bell in low key against a dark background, and these sub-titles are adeptly cut in.

Exposures are uniformly good, composition of the scenes is pleasing, and the camera angles are varied and well chosen. An effective use is made of “background action,” showing mother busily working in the background of several scenes, as man or wife are featured in the foreground.

The simple but interesting and topical story shows the couple resting in the backyard, wishing they could take a trip. But they decide to be patriotic and stay at home for their vacation. The wife starts to rake up leaves and gathers walnuts, but husband pitches golf balls until one strikes her on the leg. She insists that he get to work, so he tries to pitch walnuts into a box. He misses the box, of course, then she shows him how, with a bullet-eye every time. Cutting is particularly well handled in the sequence. Then they both shell walnuts and pack them into jars. A sequence in the kitchen, showing canning of fruits is well lighted, and continuity expertly edited. Outside again, the husband takes a ladder and climbs up on the roof, to sweep off the leaves, which is a familiar chore to anyone blessed and annoyed by walnut trees.

She tells him to stop loafing on the roof and come down and help her. He comes down but uses a clever gag of going out into the yard to work, carrying the garden tools in his golf bag. He rakes leaves for awhile then leans on his rake, apparently dreaming about something. Here, and elsewhere, he makes good use of a chemical fade, and dreams of some previous vacations, inserting a few good scenes of trips taken.

After the dream of other vacations, they sit down again, but recall there is one thing they have not done, which is to buy War Bonds—A War Bond poster is then shown, followed by a clever sequence that is evidence of the filming ingenuity of this producer. He is seen making out checks, then comes some expert double exposures of tanks, planes and guns against a dark background, as War Bonds float down. The climax comes when a Jap flag is burned up.

This is well conceived and efficiently executed “home movie,” completely titled, and should rate high among the top entries of any contest.

EDWARD PYLE, JR.

USDA Promotes Lindstrom

Appointment of Chester A. Lindstrom as chief of its Motion Picture Service is announced by the Department of Agriculture. Mr. Lindstrom, who has been associate chief of the Service, succeeds Raymond Evans, who retired recently.

The Motion Picture Service, a part of the Department's Office of Information, produces and distributes motion pictures based upon the results of agricultural research and the wartime agricultural programs.

Films Spur Sperry Workers to Action

DWARFED as it is by the amazing record of home front production, it is easy to overlook the substantial contribution to factory morale and personnel training that is being made by 16mm. sound-films. Typical of such large companies that have found uses for motion pictures is the Sperry Gyroscope Co. of Brooklyn, N. Y., where thousands of new workers have to be taught the skills of precision instrument makers as quickly as possible. Many of these workers are women who have not held jobs in industry before; few can boast of previous experience in the operation of machinery; most have never before been inside a large factory.

As part of their introduction to their new surroundings, all new employees are shown the motion picture "You are Sperry," which consists of 1200 feet of film with appropriate spoken commentary that is intended to provide answers to many of the questions an employee generally wants to ask about the organization. Thus some of the feeling of strangeness that goes with a new job is dispelled, and the uncertain anxious-to-please new-comer is given confidence because he is made to feel informed.

"You Are Sperry" introduces company executives; it tells in simple, straightforward fashion the aims and policies of the company; it takes the new-comer on a tour of unrestricted manufacturing areas. Always the greatest emphasis is upon people, the men and women who do the work.

After the new employee has been processed, his training for his job begins and is speeded by the use of sound movies. Many of the films used in this phase of his indoctrination are from those prepared by the United States Office of Education and designed to teach machining skills. Included are short features that teach lessons in how to avoid accidents, how to administer first aid in case of accident, and how generally to take care of oneself around moving machinery.

United States Signal Corps and Navy films for exclusive showing to war workers are also run off for the benefit of all employees. These stress the importance of the task of producing war weapons and point out the necessity for regular and consistently good work.

Sperry has 20 sound projectors to take care of the filmed part of the company's indoctrination program. These are kept busy at all times.

16mm. motion picture films are also making an important contribution to Sperry research engineering. They are an invaluable means for keeping records and they permit restudy of pictured experiments as often as the engineer wishes. They are a modern and useful tool.

Ford Facts

Ninety thousand pounds of ammonium sulphate—enough to fertilize 225 acres of farmland—is produced each day in the by-products plant of the Ford Motor Company at Dearborn.

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Klinger Joins PFC

Walter Klinger, business manager of Metro-Goldwyn-Mayer's Short Subject Department for the past ten years, has resigned to join The Princeton Film Center. Klinger assumes Production Manager's duties in new affiliation.

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Hollywood: 716 N. La Brea Ave.
Washington, D. C.: 1221 G St., N. W.
London: 13-14 Great Castle St.

Experiments by an Army Cameraman

(Continued from Page 233)

of the curve, just under B. Therefore, a sun arc is shot through the window at 300 foot candles. This means that no matter what it hits, a white paper, the star's face, etc., it will never be so strong that it will result in a blocked-up highlight. The cameraman knows that if an actor walks into this shaft of light in order to read a paper that he will get a good rendition of tones throughout.

Now for the room. As stated before, we want the light held down so that the objects in the room are just distinguishable. Again referring to Figure No. 2, we see that a Weston reflected reading of 3.2 will put these wall tones down near the toe of the curve at A. Therefore, the white concrete walls are so lighted that the Weston meter shows a reflected reading of 3.2 from the walls. Since these tones will be near A on the toe of the curve, the cameraman knows that he is on the straight line portion and will have deep transparent shadows that will not go black as they are on the straight line. Any darker objects in the room that should be pointed up a bit can be lighted and balanced up to be in keeping with the general wall illumination. The actor's face is keyed with a source light, the intensity of which can be judged by eye to be in balance with the rest of the scene. However, if there is any question in the cameraman's mind, he can make a mental reference to the test shots of the various key intensities made previously, selecting one he knows will give him the correct rendition of the actor's face. Fill and back light is then placed in by eye and the camera is ready to roll.

In this scene we have used nearly the entire tone range of the film running from deep transparent shadows to the brightest shaft of sunlight streaming through the window. At all times the cameraman knew where each tone would fall, making it unnecessary to resort to a hand test.

There are further uses of this scale as shown in Figure No. 2. For instance,

the scene is in a livingroom with light grey walls. It is a daytime set. The cameraman can put in the sunlight by incident readings as pointed out in the scene mentioned previously. By placing his wall tones in the close vicinity of M he knows he will have a brightly lighted set, so referring to Figure No. 2, he knows that he can get this by having a reflected reading from the walls of half-way between 13 and 25 on the Weston meter. If it is a nighttime set, he can drop his normal tones halfway between A and M and let the shadows fall down to just above A.

As mentioned before, tests prove that this system works; however, there is quite a bit more experimenting to be done. The reader should carefully note that so far we have been speaking of taking readings off of surfaces that are white or grey. Anyone who has used a meter knows that it has quite a different response to a red surface as compared to one that is white. The same is true for film. Therefore, after the reader has tested out the above method of using a meter to check his light balance, his next step is to start experimenting to find a rule-of-thumb method for tying the system into taking readings off of colored surfaces. After studying the color response of a particular film as compared to the color response of the meter, the reader can experiment to find out if some general rule-of-thumb can be established for differentiating between the amount of light necessary for various colors. For example, to use a hypothetical case, tests might prove that if the walls are deep red that if the cameraman wants a minimum of detail, instead of having a minimum reading of 1.6 (the minimum necessary in the case of white walls) the reading should be at least 13. Following the line of thought, it may be possible to set up an easily remembered scale of differentials for the various colors likely to be encountered in various interior sets.

Delinquency Film Available

AS A CONTRIBUTION to the nationwide efforts to curb juvenile delinquency, the Aetna Life Affiliated Companies of Hartford, Conn., have produced a new educational motion picture entitled, "As the Twig is Bent."

This film is specifically directed to parents and carries the warning that boys and girls have even greater need for parental care and guidance under the strain of wartime living than when conditions are normal. With so many fathers in the service and with so many mothers devoting much of their time to war work, children can easily get into serious trouble unless adequate provision is made for their care. In communities where there is poor housing and lack of proper recreational facilities, the danger of juvenile delinquency is even greater.

RENTALS SALES SERVICE

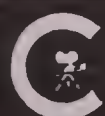
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1600 BROADWAY N.Y.C.

CIRCLE 6-5080

Coated Lenses

(Continued from Page 223)

sion is required in any other region such as the violet or the infra-red, the film thickness is adjusted accordingly.

How accurately can a film be made to conform to the theoretical conditions? The answer is—nearly enough to make it worth while to apply the process on a large scale. The square-root rule governing the refractive index of the film is not very critical and the same film material can be used with good effect on all the lenses of any optical system.

Formation of Film

Magnesium fluoride and the mineral cryolite both have refractive indices which are of the right magnitude to suit optical glasses.

Silica also is sometimes used, although it has rather too high a refractive index to suit ordinary glasses. Its advantage is that silica forms the very framework of the glass; the film can be formed by dissolving away the other constituents of the glass, leaving the silica skeleton undisturbed. The first experiments on anti-reflection films were made along these lines by H. Dennis Taylor³ of T. Cooke & Sons, York, in the 1890's. Taylor was evidently the first to attempt to reproduce artificially the natural "tarnish" produced on lenses by the action of the atmosphere, having recognized its beneficial nature.

The fluoride films are deposited by volatilization in a high vacuum.⁴ In this technique, "high vacuum" means a pressure of not more than one millionth of an atmosphere. When the mineral is heated to red heat at that degree of vacuum it volatilizes and travels in straight lines until it meets a cool surface, where it condenses as a transparent film. To make the thickness one quarter of the selected wavelength is a simple matter. The color of the reflection as a white light from the film can be seen to change as the film grows on the lens and the evaporation is stopped at the appropriate color. Some operators prefer to use a photo-electric measuring device.

It is safe to say that the great majority of lenses being treated at the present time are coated by the high-vacuum process.

Commercially produced anti-reflection coatings should be sufficiently robust to withstand the cleaning necessary in everyday use, provided that it is done in the right way. It is very necessary to keep them absolutely clean. A thin layer of grease will completely upset the optical constants of the film.

Efficiency of Coating

In attempting to give definite figures of the improved performance of coated lens systems, I find myself in the difficult position that most of the results which have come to my knowledge are not for publication. I can, however, say that it is not unreasonable to expect the reflectivity of a single surface to be

reduced to, at most, 1½%. This means an increase of about 25% in the brightness of the image formed by a camera lens having 8 coated surfaces. It is obvious that reduction in glare and flare spots is greater in proportion than the increase in transmission, because glare light reaching the image plane must have been reflected at least twice. The reduction is therefore proportional to the square of the reduction of reflection at a single surface. The effect of coating a photographic lens is illustrated in Fig. 2.

There will undoubtedly be a demand for coated lenses when commercial production gets in full swing again, especially for the high quality lenses, and in systems where every millilumen counts the application will be essential. Finally, the elimination of the bogey of flare spots will enable the computer to proceed with a freer hand in his approach to perfection.

References

1. K. B. Blodgett, *Phys. Rev.*, 55, 391, 1939.
2. K. M. Greenland, *Nature*, 152, 290, Sept. 11, 1943.
3. H. D. Taylor, "The Adjustment and Testing of Telescopic Objectives." T. Cooke, York, 1896.
4. British Patent No. 538272.

PH-346-A Recording Equipment

(Continued from Page 243)

excessive peaks and restores much more slowly (about 2/10 second). It is set to operate very slightly above 100% galvanometer modulation level. The limiting feature is very valuable for consistent operation, as it controls maximum level, protects the modulator and in general assures the highest practicable recording level on the film. The meter is arranged to indicate limiting action, or if desired, it may be used as the conventional volume indicator.

Provision is made for the normal use of one Western Electric 618 type microphone only. If, however, two microphones are required an extension mixer is connected in place of the single microphone and two microphones may be connected through and controlled by the extension mixer.

Training Manual

The equipment is such that with the barest operating knowledge of sound recording reasonably consistent results should be attainable. Basic instruction and meter readings to check the operating conditions are given on an instruction plate on the cover of the mixer panel.

In addition a very detailed instruction booklet, Training Manual No. TM 11-2350, was prepared from which a complete working knowledge can be obtained.

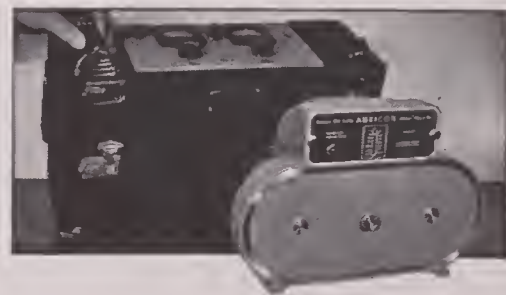
The equipment as now in service fills a gap long felt in the complement of Signal Corps motion picture equipment. In contrast to the sound systems of ordinary newsreel cameras of the single film system type, this equipment gives results comparable to studio production.

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since 1899

Aces of the Camera

(Continued from Page 228)

thought he was fibbing; and so, in an unprecedented move, hired the renowned Jackson Rose to creep up on the old boy and catch him looking when he wasn't looking. They certainly picked the right man when they picked Jack. He had photographed too many film dramas (250 the papers said) not to know that many a man has been foiled in his schemes, nefarious and otherwise, by the sight of a pretty woman's—a-ah—ankle. And so he enlisted the aid of a budding young actress who, in the interest of justice, was prevailed upon to expose her seductive extremity while he got a shot of the "blind man" focusing his optics on hose. The papers record that it was an expensive peep for Mr. Zyla, although they neglect to say whether or not he thought it was worth it. Furthermore, they failed to mention whether Jack irised out on this shot or used his rising and falling curtain shutter.

In 1919, realizing the help it would be if cameramen out on location could develop and look at a piece of negative, Jack built and pioneered the first test box to develop film under location conditions. The original machine he built for this purpose didn't survive, but the idea did and it was another step in the direction of better pictures.

Incidentally, Jack has more than ninety patents to his credit for photographic attachments and devices he has invented during his thirty-four years in the business. He is a tireless researcher delving into every phase of the art and science of photography. His work in color rendition on monochromatic film, done in 1930 on his own initiative, still remains one of the most comprehensive tests ever carried out. To complete it he shot tests with every type and make of raw stock, using every type of filter known to the industry, in daylight and under arcs and Mazdas, of every color in the spectrum; and every color was represented by nine shades. It took nearly a year to complete the test, but when it was finished it represented the first really comprehensive and scientific approach to one of the most fundamental problems in monochrome photography ever made. DuPont and Paramount were quick to recognize the value of such a work and each bought a set of the original prints, and the information turned up by the

test was widely published in photographic magazines.

Another of his ideas was the "Cinema Focus Chart" which he brought out about the same time, and which every cameraman must have used at one time or another. Still another was the test kit, bought from him and distributed by Leica, with filter holder and sunshade for making hand-samples on location. All this, while in his spare time he was making prize winning still pictures that were being shown in salons all over the world.

His first trip to Hollywood was in 1916, when he came out here to photograph a picture featuring Max Linder, the famous French importation. But Hollywood as it presented itself to him in those days didn't impress him. He wondered why he had been sent so far to shoot a picture. And though Mrs. Rose, with feminine intuition, could see a wonderful future for our Sunny Southland, Jack couldn't see any future for any kind of business in a place so far removed from civilization.

When he went back to Chicago, however, he must have taken out some of the California Chamber of Commerce literature and reread it, because a couple of years later he came out again to stay. And when his wife asks him, in that way that women have, if he thinks Hollywood has a future, he grins sheepishly and goes into his laboratory to work on another gadget.

It was while he was in the east during that period that he made a picture he still remembers as the highlight of his experience. No ordinary film, it was called "Miles of Smiles," and consisted of thousands of feet, shot newsreel style in several of the larger Eastern cities, of the wives, mothers and sweethearts of the boys overseas. These pictures were then shipped to France and shown to the boys "over there" for Christmas. Jack says it was one of the most moving experiences he has ever witnessed. When the papers announced that the films were to be shot, in one of the local parks, thousands of women, carrying their children, would come and stream by the camera. Old ladies, some of whom had to be carried to the park, composed themselves and walked bravely past the camera so that their sons would see them at their best. The scenes of those whose loved ones were in hospitals over there were particularly touching as they forced happy smiles to their tear stained faces before presenting themselves to Jack's lens.

For the last 11 years Jack has been on the camera roster at M.G.M. With his penchant for the unusual he likes to get the assignments for difficult shots, and frequently succeeds. Joe Ruttenberg, A.S.C., had him make the night scenes

(Continued on Page 250)

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W. E. Reports New Sound Systems

E. S. Gregg, vice president of the Western Electric Export Corporation, has announced the completion of a new line of sound reproducing systems which embrace the many advances in technology evolved during the war. The new equipment will become available to exhibitors in foreign countries when materials and labor are released by the government of the United States, Gregg said.

"Salad Bowl" Speaker Developed for Navy

THE demand by the Navy for a loudspeaker, that could rise to the occasion and satisfy the rigid requirements of today's great naval battles, has been met in a new speaker designed by Bell Telephone Laboratories and now being produced by the Western Electric Company. This high powered unit, sometimes called the "salad bowl" because of its shape, has passed the rigid Navy tests to insure reliable operation under the wide geographical range of the fleet's activities.

Designed for speech reproduction, this speaker has an outside diameter of 12½ inches and weighs approximately 25 pounds. The unit is composed of three principal sections: the base, which provides space for a transformer, and a terminal strip, and provisions for the lead-in cable; the horn, which is of the folded exponential type; and the magnetic unit which is fitted with a two-piece permanent magnet, and diaphragm. The loudspeaker is constructed principally from formed sheet metal and moulded plastic.

The voice coil impedance of the unit is approximately 7.5 ohms. The speaker develops the high sound pressure of 50 dynes per square centimeter when operated at the rated electrical input and measured at 10 feet from the speaker on the sound axis in open air.

Other features of this loudspeaker are that it is resistant to shock, vibration, salt spray, gun blast, and is readily accessible for servicing due to its simple construction.

A New Wrinkle

Pictures go into politics with the plan just originated by Business Films, of Washington, D. C., for shooting one-minute election shorts of Senators and Representatives for local screenings in their constituent District theaters.

First to go before the cameras in this unique election year plan will be Jennings Randolph (D., W. Va.), Chairman of the important House District Committee.

Ideas of the producers is that the films will not only save Congressmen trips back home in the vital invasion year, but for the first time in the history of Congressional campaigning will present the candidate's complete political personality "in person" and on a mass scale, through a medium appealing to both the eyes and ears of his constituents, and which can't be turned off.

A number of prints will be furnished each candidate, enabling him to obtain simultaneous screenings in different constituent District houses. Cost of the shorts will run \$300, including five prints. Pictures will be shot in the company's Washington studios, using newly installed RCA studio sound equipment. Newsweek Magazine reports the plan as "a new wrinkle in coming campaigns."

New Scenic Transparencies

More than 700 Kodachrome transparencies of superb photography and vivid coloring, comprise a collection of 2x2 slides of scenic points of interest in the United States, Canada, Mexico, Hawaii and Latin America, now available from DeVry Films & Laboratories, 1111 Armistage Avenue, Chicago. Each subject is covered by six slides, which are sold only in sets. Colorful literature is available free.

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Aces of the Camera

(Continued from Page 248)

for "Mrs. Miniver." For a year and a half, in what he looks back upon as one of the happiest experiences of his career, he worked out problems for Slavko Vorkapitch. His talents are also used to enhance the "Passing Parade" series, and the Pete Smith shorts.

In the opinion of his fellows, Jack's greatest work, and a most important contribution to photography, is The American Cinematographer Hand Book and Reference Guide, which he wrote and compiled. This book, which every cameraman owns and thumbs through regularly, is as necessary a part of a cameraman's equipment as a Baedeker is to a tourist. Containing every conceivable bit of information of a photographic nature, exhaustively covering every subject in the entire field from camera to screen, it is now in its fourth printing of the fourth edition. It has been supplied to every cameraman in every division of the Army and Navy; is used by almost every government agency with a photographic interest, by universities, and industrialists. A truly remarkable book, it is a monument to the painstaking genius of a man who has been an Ace of the Camera from the beginning, Jackson Rose.

New Filmosound Releases From Bell & Howell

HI BUDDY! (Universal). No. 2527, 6 reels. Excellent, timely comedy drama of the founding of an "off-the-street" club, and its decline, due to preoccupation of elders with war problems. Genuine entertainment, but based on current everyday affairs in a most appealing and realistic manner. (Dick Foran, Harriet Hilliard and an amazing cast of sub-teen juveniles.) Available from August 2 for approved non-theatrical audiences.

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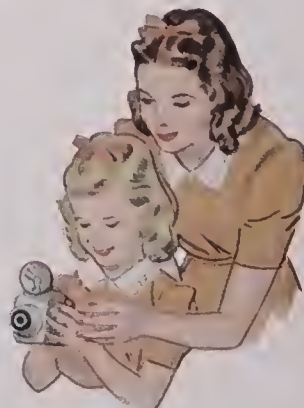


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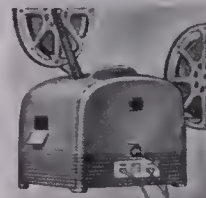
NEW FILMOSOUND LIBRARY FULL-LENGTH FEATURE

Allan Jones, as a returning war hero, has a rough and tumble time on the homefront when he gets mixed up with a bunch of lively teen-agers including Donald O'Connor, Gloria Jean, and Peggy Ryan. *Johnny Comes Marching Home* has been tickling theater audiences for months now... and you and your family and friends will love every minute of it. Universal has just released it through the Filmosound Library for showing at approved non-theatrical locations (which means your own movie party).

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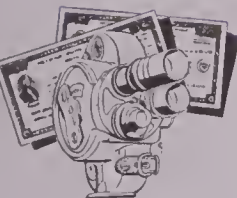
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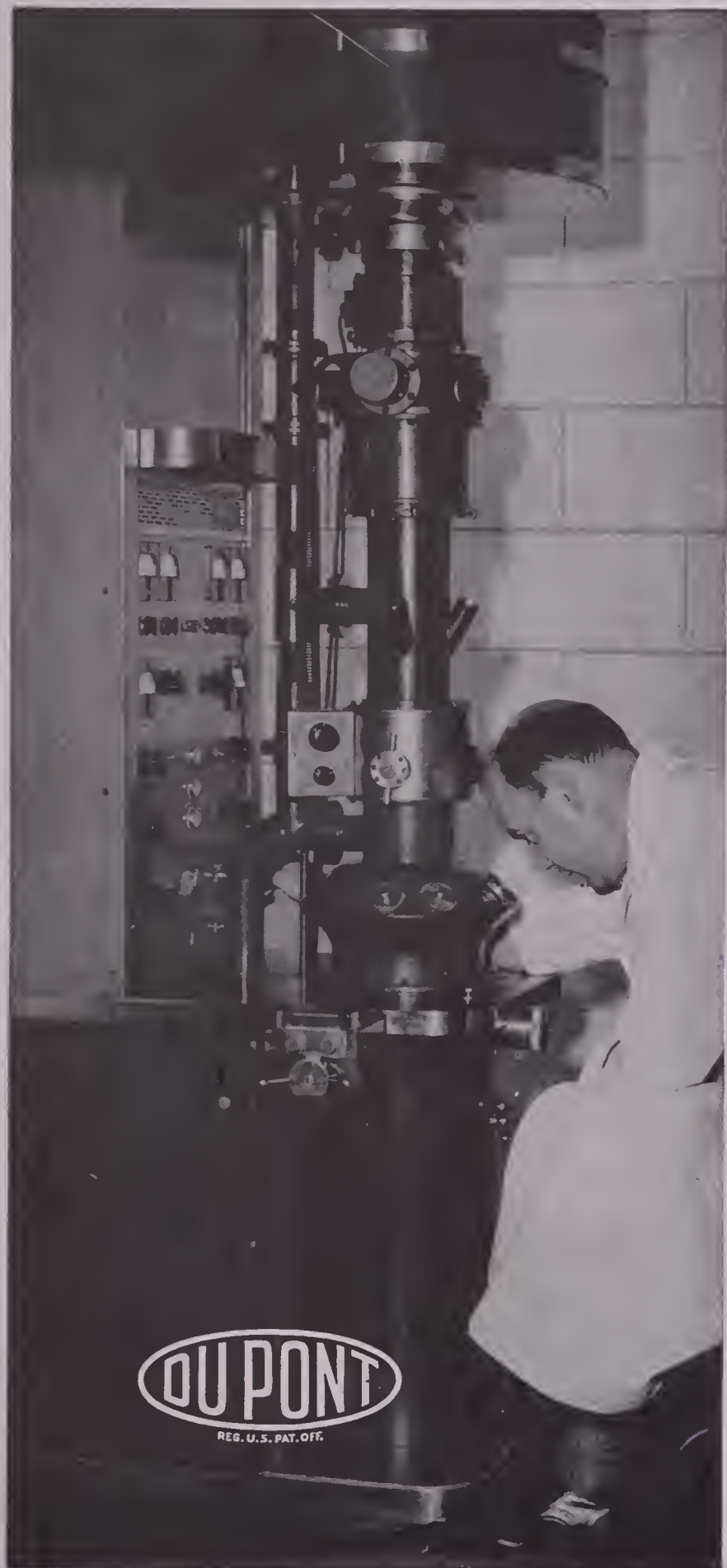


In This Issue . . .

Color Filters and Their Use

**August
1944**

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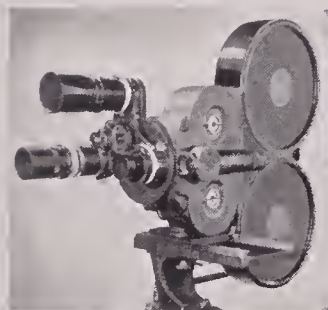
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AMERICAN INEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

AUGUST, 1944

NO. 8

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THE FRONT COVER SHOWS Director of Photography Ray Rennahan, A.S.C., lining up a shot during the filming of "Belle of the Yukon," which he photographed in Technicolor for International Pictures. Gypsy Rose Lee is the actress being lighted. She and Randolph Scott are starred in this lavish musical film.



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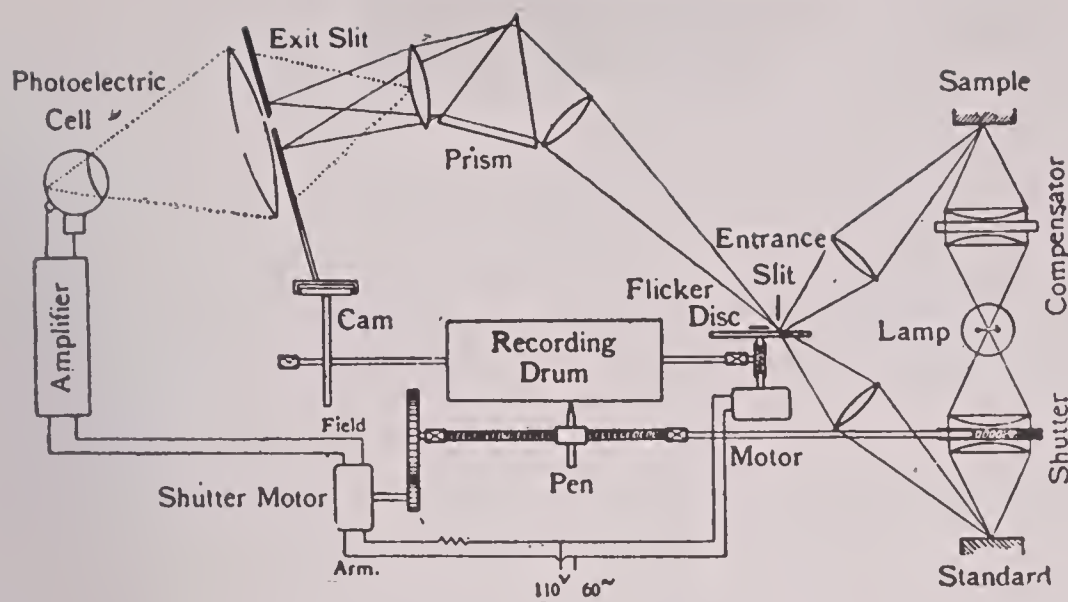
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SHOOT COLORFUL SCENE! Ignited by a burning cigarette in the pocket of Gary Cooper, a Long Island mansion owned by his father-in-law burns down in a sequence of International Pictures' "CASANOVA BROWN." Gary Cooper, Teresa Wright, Patricia Collinge and others gather for the "post mortem" while cameras turn for the picture. Director of Photography is John Seitz, A.S.C.



PRELUDE TO MURDER. Director Fritz Lang outlines a scene involving the psychological development of a murderer to Edward G. Robinson, who co-stars with Joan Bennett in International Pictures' "THE WOMAN IN THE WINDOW," modern mystery thriller, as script girl, Nancy Lee, and cameraman, Milt Krasner, A.S.C., look on interestedly.



Recent Advances In The Physics of Color

By H. V. WALTERS, B.Sc., A.R.C.S., D.I.C.

THE subject of color has many aspects, physical, physiological, psychological and aesthetic, and though we are restricted to the physical side in this paper, I hope I shall not give the impression that it can be kept hermetically sealed away from the others, or that it is the biggest and most important as far as future work is concerned.

The measurement and specification of color is properly a physical subject, and the main problems in color processes of cinematography and television are as yet physical or chemical, but if the physics of these processes is divorced from psychophysics and aesthetics, color in the cinema will have a very doubtful future.

MEASUREMENT AND SPECIFICATION

The International Standards for colour specification were laid down by the Commission Internationale de l'Eclairage (C.I.E.) some 12 years ago,¹ and though they cannot therefore be called recent, it is necessary to get a grasp of them in order to understand more recent work.

The following account is necessarily very sketchy and far from rigorous, but it should give a picture of the main points in the C.I.E. resolutions.

For a given observer under definite conditions of viewing, a patch of colour C can be matched by a suitable additive mixture of three other colours, say a red, green and blue, and we can represent the colour match by

$$C = rR + gG + bB \quad \dots\dots\dots (1)$$

where R , G and B are unit amounts of red, green and blue. In the C.I.E. system the arbitrary choice is made that

there should be equal numbers of units of the three primaries used to match a particular source of white light. Equation (1) is generally true, and one might equally well match R , G , and B in turn with another set of primaries X , Y , Z .

$$R = p_{11}X + p_{12}Y + p_{13}Z \quad \dots\dots\dots (2)$$

$$G = p_{21}X + p_{22}Y + p_{23}Z \dots\dots\dots (3)$$

$$B = p_{31}X + p_{32}Y + p_{33}Z \dots\dots\dots (4)$$

These equations are in algebraic form, but it should be borne in mind that the sign of equality means “is a colour match with” and not as in “sixpence equals half of a shilling.”

CHOICE OF PRIMARIES

One could have matched C of course with X, Y and Z ,

$$C = xX + yY + zZ \quad \dots\dots\dots (5)$$

and if this is done, the values of x , y and z are found to be the same as those one would get from combining the first four equations algebraically, *i.e.*,

$$x = rp_{11} + gp_{21} + bp_{31} \dots \dots \dots (6)$$

and similar equations for y and z .

From this result it is clearly a matter of convenience which set of primary colors, X, Y and Z are chosen and there is no physical limitation upon them. The set chosen by the C.I.E., possess two notable advantages. The first is that for all physically realisable colors, x , y , and z are positive or zero. The second is that the luminosities of X and Z are both zero, so that transmission or reflection factors can be found simply from y . Both these properties are unobtainable with physically realisable primaries, so there is the concomitant disadvantage that it is not possible to do colorimetry in the C.I.E. system directly, but only by means of algebraic transformations

or rather lengthy computation from spectrophotometric data.

One might have anticipated that in the period since 1931 there would have been dissatisfaction at the fact that the International Standards, which are necessarily highly permanent, should be tied to the experimental results of that time, and also that they were crystallized in the particular form then thought best. Criticism of the experimental results has not in fact been forthcoming to any significant extent, a tribute to the original work and to the standardizing committee. The form of the resolutions has been more of a bone of contention and I shall return to that shortly.

OBJECTIVE MEASUREMENT

The C.I.E. resolutions postulate an "average observer" but no individual has been found with standard characteristics in all respects. The correction of the results of visual colorimetric observations to standard ones is difficult and tedious, and for accurate work it is better and simpler to compute the color specification from the spectral characteristics of the sample and illuminant, using the tables for the spectral color matching properties of the C.I.E. standard observer.²

It is a matter for regret that we in this country (England) have concentrated on colorimetry to the detriment of the development of spectrophotometry. Visual colorimetry is an extremely useful tool, but personal variations and limited sensitivity make it rough. This is not academic for the film industry, since personal variations can give rise to heated arguments in a color control laboratory.

In Fig. 1 is illustrated an apparatus for recording spectrophotometric curves which has not yet appeared on this side of the Atlantic.³ Light from a common source falls on the sample under test and on a standard reflecting block, say a thick layer of magnesium oxide. By means of a rotating sector (flicker disc) the light is reflected from each in turn on to the entrance slit of a monochromator, and the spectrally selected light emerging from the exit slit falls on a vacuum photo-cell. The A.C. component of current due to the cyclic variation of light intensity is amplified and used to drive a motor, which in turn operates a shutter or polarising device in one of the beams in such a way as to bring about balance. A cam moves the exit slit through the spectrum, and this movement is synchronized with the rotation of the drum carrying the recording paper. A train of integrating machines may be attached to calculate the C.I.E. specification and according to the complexity of the curve the complete record is taken in from 15 seconds to a minute.

The performance of the instrument is well illustrated by some measurements on white papers made with the Hardy recording spectrophotometer. Of a num-

(Continued on Page 278)



Above, three frame enlargements from 16mm. film. Left, no filter was used. Center, same scene with K-2 filter. Right, same scene with 29-F filter.

Color Filters and Their Use

WE have received so many requests for information concerning color filters and their use that we herewith present the following data on color filters from the American Cinematographer Hand Book and Reference Guide. This book, written and compiled by Jackson J. Rose, A.S.C., contains more than 200 pages of practical information on all photographic problems. From time to time we will present various charts, tables and other data contained in this book.—The Editor.

K 1—Slight color correction for all regular orthochromatic films; of little value to any of the new type panchromatic films.

K 2—Medium color correction for all regular orthochromatic films; of little value to any of the new type panchromatic films.

K 3—Full color correction for all regular orthochromatic films; darkens blue sky and water; brings out white clouds; has slight color correction value on panchromatic films.

AERO 1—Slight color correction for all types of panchromatic films; produces slight contrast; penetrates slight haze; helps to snap up faces with very little added exposure.

AERO 2—Normal color correction for all types of panchromatic films; produces medium contrast; darkens blue sky a few shades; brings out clouds; greater haze penetration than Aero 1; most popular filter used for general exterior photography, particularly when more contrast is desired on cloudy days.

15 G—Full color correction for all types of panchromatic films; produces more contrast than Aero 2 and is used more for open landscape; darkens sky, bringing out clouds; strengthens relief of foreground; lightens all yellows, orange, red and slightly lightens green and magenta colors.

21—Slight over-correction for all types of panchromatic films; produces more contrast than the G filter; full and strong cloud effects; lightens normal panchromatic make-up slightly; good for mountain and aerial work; pene-

trates distant haze; good for use with long focus lenses.

23 A—Medium over-correction for all types of panchromatic films; darkens blue sky and water for light night effects in sunlight; lightens normal panchromatic make-up; produces more contrast than 21; darkens greens slightly; lightens all yellow, orange, red and magenta colors.

25 A—Great over-correction; action is the same as 23 A but more pronounced; produces very strong contrast; penetrates aerial haze; creates dramatic and spectacular night effects; used with infra-red films also for three-color separation negatives as tri-color red.

29 F—Extreme over-correction and extreme contrast; full night effects in strong sunlight; turns blue sky and water to strong black; necessitates special make-up, otherwise face will photograph white and chalky; also used with infra-red films; turns all yellow, orange, red and magenta as white.

70—Extreme over-correction and extreme contrast in all blue and green colors; used generally for haze cutting in aerial work and heavy night effects in strong sunlight; also used with infra-red film.

72—Extreme over-correction and extreme contrast in all blue values; turns blue sky and water to jet black; can be used for long distance haze cutting in aerial work; for extreme night effects in strong sunlight with lens wide open only; also used with all types of infra-red film; cannot be used with the slower type of panchromatic films.

88A—Cuts out all visible colors but transmits infra-red rays; can only be used with infra-red film requiring the strongest of sunlight; cannot be used with any other type of film.

47-C5—Generally used with orthochromatic films to increase the blue contrast; makes blue sky lighter; makes any emulsion color-blind; also used for three-color separation negatives as Tri-color Blue.

49-C4—Used principally as a viewing filter for arc and daylight illumination; increases blue contrast when used with

orthochromatic films; also used for color separation from transparencies; of no photographic value to panchromatic films.

X 1—Has slight softening effect on all panchromatic films; can also be used with orthochromatic films; renders all greens and yellows in slightly lighter shade and all reds and blues in slightly darker shade; gives full correction for Super Pan in daylight.

X 2—Has medium softening effect on all Pan films; same action but stronger green contrast than X 1; gives full correction with Super Pan in Mazda light; darkens reds slightly; also used for snow scenes where deep shadows predominate.

56 B—Strong softening effect on all types of Pan films; produces great green and yellow contrast; same action as X 1 and X 2 but with considerably stronger effect; in combination with 23 A is used for softer night effects without excessive contrast.

58 B—Slightly stronger than 56 B; used for the same purpose but for more contrast; picks up green as white, other colors as dark; also used for color separation negatives as Tri-color Green.

3 N 5—Combination of Aero 1 and 50% Neutral Density filter; light color correction without contrast; softens slight glare and generally used for open landscape, street scenes, desert and snow scenes.

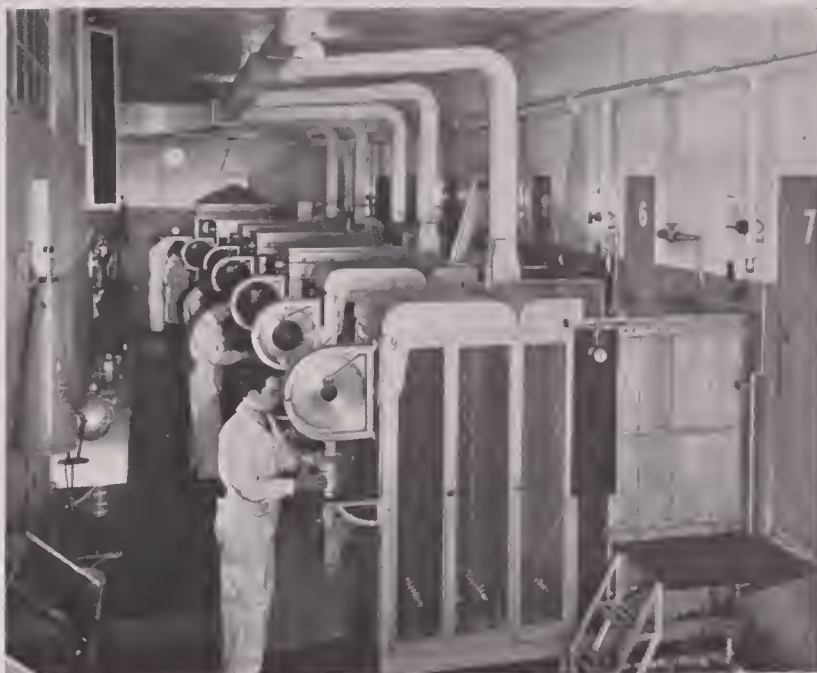
5 N 5—Combination of Aero 2 and 50% Neutral Density filter; medium color correction without excessive contrast; softens strong glare and contrast; same action as 3 N 5 but with added detail; used for snow scenes and strong contrast with heavy shadows; gives pleasing values when used on open water scenes.

25% ND—Light contrast neutralizer; softens light glare and contrast; light exposure compensator.

50% ND—Medium contrast neutralizer; medium softening of glare and contrast; medium exposure compensator; may be used with all types of film and in combination with any filter.

75% ND—Strong contrast neutralizer; same action as 50% ND but with greater degree of soften effect.

(Continued on Page 278)



Film Production In Argentina

By WILLIAM BURTON LARSEN

ARGININE feature films are winning larger audiences in Latin American theatres each day, due to improved quality of direction, acting, photography and, largely, because of the high quality of laboratory work which is now available.

The film industry in the Argentine, like that in the United States, has experienced its "growing pains". In its early years small companies were formed, "just to make money", and the films were mediocre because the small company organizers closed their eyes to the need of good technicians. The laboratory work was done largely by amateurs. Thus, the resulting films that reached the screen were far from desirable.

In 1927 an Argentine banker, whose hobby was developing movie films, changed the entire complexion of the Argentine film industry when he decided to give up the banking business and go into the laboratory business. He was Alex Connio, now deceased. With his son, Carlos, he established the first film laboratory in Argentina dedicated exclusively to the processing of motion picture film.

The first years were not easy. All the machinery used in the laboratory was designed and made by Alex, with the assistance of his son and a few enthusiastic young friends who looked to the new laboratory for a career. Among

those boys was young Tonino Bava, who today is manager and partner in the Alex Laboratories. Carlos Connio, who had long experimented with his father, soon became a guiding hand in training new laboratory technicians to handle the increased volume of business that began to pour into the new plant.

During the early days of the laboratory the "Rack and Tank" system of negative developing was used. In 1933 Alex designed and built their first developing machine which started operation in 1934. Soon three other machines were constructed, and thus began the modernization of motion picture film processing in Argentina.

In 1936 Carlos visited the United States to study the film laboratories of New York and Hollywood. He returned to Buenos Aires and reorganized the laboratories. New machinery was installed, and the laboratories soon were able to handle large scale daily production demands. The first feature film to come out of the newly transformed laboratories was "Asi Es El Tango". The second was "Papa Chirola". The quality of negative developing and prints that came out of the new laboratories played a large part in spurring film production in Argentina, for when film producers found they could have modern, dependable laboratory work they plunged into the making of features. In 1937 Alex Connio died; just ten years after founding his laboratory, but he died happy in the knowledge, he had played a large part in stimulating the film industry in his native country. His son Carlos took over the direction of the company. Today it is in these laboratories that most of the processing of Argentine films and newsreels is done, as well as making



Upper left is William Burton Larsen. Top right, developing room in Alex Laboratories. Center, printing room. Bottom, Carlos Connio, director and owner of the Laboratories.

copies of the majority of American feature films, of which duplicate negatives are sent from Hollywood and New York.

In 1934 the laboratories had one automatic developing machine. Today there are ten machines working 24 hours each day. There are 12 modern automatic printing machines running day and

(Continued on Page 282)

NOTE: Mr. Larsen is the newsreel cameraman for RKO Pathe News, stationed in Argentina. At present he is also the "pool" cameraman for the five American Newsreels in Argentina. He has spent the past ten years in Latin America making newsreels and shorts. During that time he has made pictures in Brazil, Peru, Bolivia, Ecuador, Chile, Argentina, Uruguay, Paraguay, Mexico, Guatemala, Panama, Costa Rica and Cuba.

—The Editor.



Aces of the Camera

James S. Brown, Jr., A.S.C.

By W. G. C. BOSCO

A CERTAIN popular brand of cigarette has, the manufacturer claims, so much allure that the least energetic person is actually anxious to walk a mile to get one. Even in normal times, when you could get all the gas you wanted and didn't have to do any more walking than was strictly necessary. This claim has been made for years, in good weather and bad, and has been substantiated by a vast number of advertisements which continue to labor the point.

Perhaps the willingness of even a portion of this nation of congenital car riders to walk more than a block for anything amazes even the manufacturer. But, at any rate, each of these advertisements features the photograph of a famous somebody holding one of these cigarettes, unlit, and enthusiastically endorsing the allure angle of the smoke while going on record with an expressed willingness to walk a mile to get one.

People representing every shade of opinion have been featured in these ads,

but they all agree with each other on this one point with monotonous regularity. Perhaps it is a portent, in a world of disunity and disagreement, to find such solid unanimity among so many important people. Because the people featured in these ads are important people, with big names. People who have arrived. The debs, not the dubs.

Yet, with all that, being a pipe smoker and a reluctant walker at best, we were inclined to skepticism. Did these people really say these things the advertisements claimed they did? Did these people even exist? Or were they just a figment of the copywriter's imagination? Frankly, we were worried. We wanted to believe. Human integrity seemed to be at stake. But there was always that doubt. Until one day we saw smiling wanly up at us, in color, from the back cover of *Life Magazine*, the face of camera ace Jimmy Brown, A.S.C. There he was, with the same unlit cigarette in his hand, saying almost word for word what all the other famous people had said

about this smoke before him.

The opportunity was too great to miss. Once and for all we would settle this perplexing question and pass on the information to our grateful readers. Even though it was an old copy of the magazine we were reading in a dentist's office, and there was the chance that Jim had changed his brand in the meantime, we hastened to interview him. Forgetting, in our search for truth, the dental appointment for which he had waited six months.

We found Jim Brown in his home studio at Larry Darmour's shooting interiors on a picture for Columbia release. He had just returned from an arduous location trip and when, during a break in the proceedings, he stopped to talk he pulled out a package of cigarettes, and we noticed with satisfaction that it was the same brand. He offered us one, but having quite a bit of walking to do as it is, we lit a pipe.

Jim answered our questions with refreshing candor. There was no hedging. Yes, he smoked the cigarettes, as I could see. Yes, he admitted saying what the ad quoted him as saying, although not in precisely the same words. It was only when the question of walking was raised that Jim lowered his eyes from mine and tried to change the subject to filters. But we insisted. So Jim ups and admits that he had never walked more than a block and a half for anything; that he had never had to walk a mile for his favorite cigarette because he could always get them at the corner drugstore. But, he insisted, he did find them a darn good smoke, and very refreshing.

Now as anybody can tell you, Hollywood is a very small town. So it was inevitable that the news should be bruited around quite quickly that Jim Brown, A.S.C., got a lift from a certain brand of cigarettes. And it was inevitable that more and more cameramen, who also needed lifts, switched brands. It was even noticed that some cameramen who were not smokers carried this brand of cigarettes in their pockets for their friends; in grateful appreciation to the tobacco company for having included a cameraman in their Hall of Fame. They appreciated this recognition to their profession, a recognition so frequently withheld by reviewers and critics. As a result many of the A.S.C. members now smoke the same refreshing cigarette. And if a plug like that isn't worth an ad in this magazine we don't know what is. (Advertising manager please note.)

The profession of motion picture cameraman was accounted glamorous and exciting in the days before mountains were built in sound stages and rear projection brought the great outdoors into the studio. It was an adventurous life for a cameraman when film fare was flavored by stars who jumped from car to train, and a broken rib could be anticipated with more certainty than a paycheck. The action picture made Hollywood famous, and its devotees, who

(Continued on Page 279)

Tropical Problems in Aerial Camera Maintenance

By R. H. BAILEY

RUST, corrosion and fungus, resulting from the hot, wet climate of the tropics, have been bugaboos to the cameramen of the Armed Services since the opening days of the war. Bad as the conditions are on the ground, the aerial cameras take a greater beating because of the wide range of altitudes and temperatures under which they are used.

The Fairchild Camera & Instrument Corporation, manufacturers of the bulk of aerial cameras used by the U. S. Army and Navy, has been trying to solve the tropical problems for the aerial cameras ever since the war began, and as the result of long research into tropical fungus and moisture conditions, is now providing corrosion and rust preventative finishes on nearly all metal parts of these instruments.

The aerial cameras, as a general rule, are large, heavy machines weighing in the neighborhood of 60 to 70 pounds. They are constructed mainly of aluminum and magnesium, with the small, critical inside mechanism parts composed of steel. The cameras are electrically operated so they wind and trip automatically, and are constructed to hold large rolls of film, sufficient for several hundred exposures. Lenses are large and heavy, and in many cases are cemented together with balsam or methocrylate cement. In certain models there are electrical heating elements incorporated, consisting of extremely fine resistant wires which carry the electric current to heat the equipment at high altitudes and low temperatures. Electrically-heated cameras have insulated linings of cork and tinfoil to help retain the heat. A photo cell unit is used with one model to control the shutter trip action. And each camera is shipped in its own leather and steel trunk, so you see that they are a far cry from the little black dollar box cameras.

The consistently high humidity and heat of the tropics causes the surfaces of the aluminum and magnesium castings, when not protected by anodizing or special paint, to corrode readily, unless the surfaces are cleaned often. This corrosion takes the form of a greenish residue which gradually pits the surface of the metal.

The moisture-laden air also causes steel parts in the cameras' shutters and drive mechanisms to rust easily unless they are oiled and greased frequently. These steel parts are usually of a criti-

cal nature and are specially heat-treated in order to withstand the shock to which they are subjected during the normal operation of the camera.

Because some of the units, notably the shutter and magazine drive mechanisms, are covered and are fairly airtight, condensation forms on the inside of the housing when the cameras are taken to high altitudes, thus causing the steel inside parts to rust.

If cameras are left on the ground for a period, the humid, warm air gradually seeps into the shutter and drive housings, and is carried aloft with the camera on high altitude missions. At these high altitudes the air is very cold, and much drier than on the ground. This causes condensation when the cold air comes in contact with the warm, moist air in the units, and moisture forms on the steel inside parts. The rust caused by this condensation usually goes undetected until a breakdown occurs, as, ordinarily, the housing covers could not be removed.

The Fairchild company found that some of its earlier model trunks and carrying cases, which were lined with felt pads fastened to the frame of the trunk with animal glue, caused a great deal of corrosion on the cameras because the felt retained the moisture and held it in contact with the aluminum and magnesium baseplates of the cameras.

Cameras left in planes overnight in the south Pacific islands would invariably be drenched with moisture the next morning and would have to be thoroughly dried off before being used. Moisture would seep between the lens elements and form in pools. And electrical heater wires rusted very badly, causing them to break easily.

Another problem which proved troublesome was the formation of fungus on the lining and fabricoid covering of the camera trunks, between the glasses of the lenses, and on the cork insulating lining of certain camera models. Due to the extreme heat and moisture conditions in the tropics, fungus grew in abundance, and very heavy and varicolored growths formed on the felt and cloth linings of the trunks and carrying cases, attracted by the glue used to hold the felt to the trunks. Fungus also grew readily on the cork linings of other Army and Navy equipment, and, gen-

It was noted that certain types of



The tropical scenery above is beautiful, but the humidity that fills the air in those locations makes camera care a headache for cameramen of the Armed Services.

glue seem to attract mites, which transport the fungus spores.

Fungus on the lenses was the cause for much study. Actual etchings in the glass resulted from the secretions of the mites which found their way between the lens elements. If the lenses were not cleaned often, this etched condition could not be removed. Lenses should be cleaned with blasts of compressed air; air is not always available, so lens tissue, or soft, lintless cloths can be used. Water should never be used.

In order to keep the cameras in the field in a going condition at the outset of the war, the Fairchild company set-up a comprehensive service department, with camera technicians stationed in every battle area and with every photo reconnaissance squadron, instructing the photographers in methods of combating moisture and fungus. In addition, the servicemen hunted down all cameras with cork linings and yanked out the insulation.

From their work, the servicemen formulated remedies. One of the best solutions to the moisture problem was found to be the hot room or hot locker for storing the equipment. All through the tropical areas of the world the servicemen have constructed small buildings of light board, and installed rows of electric light bulbs, or some type of electric heaters, in the rooms. The rooms are

(Continued on Page 282)

War Cinematography In Russia

By ALEXANDER NOVOGRUDSKY

MOSCOW JOURNALIST AND FILM CRITIC

DRIFTING by the windows of our train were terraced foothills, mountains, with bits of lowlands here and there to taunt us with an occasional glimpse of the horizon beyond. My companion was young Ukrainian Igor Savchenko, producer of the film hit "Bogdan Khmelnytsky," who kept his eyes glued to the passing landscape. He was seeking film locations that would look like his native Ukraine.

You might ask why he didn't go to the Ukraine to film his picture. Well, he couldn't very well, for this was the first year of the war, and the Germans had overrun the Ukraine. Film studios of the Ukraine had been removed far to the east. The Kieve studios had been moved to Ashkabad, the capital of Turkmenia. One might well have thought the film producers of the Ukraine Republic would have been forced to stop film production. But they could not be stopped. And here, on a train passing over the Alatau Mountains heading for Siberia, was this film producer hunting for locations to film a story about the activities of the Ukrainian Partisans. Igor, like all the other people in the Soviet film industry, was vehemently devoted to his work, and nothing but death could stop him.

Igor firmly believed the Germans would eventually be driven out of the Ukraine, and he wanted to have his film ready to show the people when the Germans were defeated—but he wanted it to look authentic. Even the war could not make him create a picture that he would be ashamed of.

Watching Igor, I was reminded of the previous winter of 1941 in Moscow. The city then seemed deserted and colder than usual. The outskirts were lined with anti-tank pits and barriers. White army trucks had hurried down the highways to the west. The Germans had been repulsed, but the battle front was still near.

There was one spot in Moscow that teemed with activity. So many people rushed in and out of a white house on Gorky street that one might have believed it was army staff headquarters. In reality it housed a quite different staff. This building belonged to the Cinema Industry. As they returned from the front, journalists, scenario writers and cameramen came here. In offices on the second floor, the only place that was warm, fresh subjects for films were discussed, new ideas and fresh news from the front were exchanged—all this with the enemy knocking at the city's gates.

These men didn't always find time to elaborate the treatment of their film ideas, but these ideas, acquired in battle, were sent to remote places in the east where temporary studios had been erected. Oftimes story conferences were interrupted at night by the sirens, and the film men would dash to the rooftops and watch the searchlights sweep the sky to ferret out German planes that had broken through. Art and war were indivisible. The cinema refused to fall silent beneath the thunder of war. In her own manner the Cinema participated in the war. During lulls in the fighting our soldiers drew fresh strength from seeing films.

All of Russia maintained tremendous interest in the cinema, even during the darkest days of the fighting. It was this interest that caused my newspaper to send me throughout Central Asia to report on the activities of the studios that had been removed beyond the danger of the invaders.

At the city of Almaata I detrained and soon was standing in a temporary studio that housed the cinema industry of both Moscow and Leningrad. The structure was formerly a club, and was not designed to house a cinema studio. Thanks to the aid of the government of the Kazakh Republic, stages, cutting rooms and other quarters had been set up with remarkable speed.

The place was a beehive of industry. Everywhere sets were being built. But there were many handicaps. Lack of lumber, for example, made it necessary to use woven reeds for walls. It is amazing how necessity makes one realize that there are substitutes for practically every material thing.

When I was at the studio the film program was made up of numerous short films, which included drama, satirical sketches, and stories with war themes.

First to greet me at the studio were Ivanov and Stolper who were then completing the editing of "Chap From Our Town." Pudovkin was preparing to film "In Name Our Country." Eisenstein was preparing to start a picture about Ivan the Terrible. Eisenstein's office looked like a museum, with ancient weapons, decayed folios and 16th Century costumes everywhere.

Kazakhstan, Tadjikistan, Uzbekistan and Turkmenia have all acquired new cinema industries since the war. When I arrived in Tashkent I found Sergei Gerasimov working under a broiling sun shooting "Unconquerables," a picture

about the defense of Leningrad. In Ashkabad Mark Donsky was filming "How Steel Was Tempered." In Stalingrad Yutkevich was making a comedy.

I found Alexandrov a new film in Baku, and in Tbilisi the Georgian film specialist, Mikhail Chiaureil, was producing "Georgi Saakkadze," a story about the past Georgian glories—this during the days when the front lines were creeping nearer and nearer Valdivkavkas.

Thinking today of those troublous times, I marvel at the courage and bravery of those soldiers who finally have driven the enemy out of those Ukrainian cities where the cinemas and theatres are again open to the public. Two splendid film bases have been established at Odessa and Yalta. The Lieve studios have resumed production. Studios in Leningrad and Moscow again house their returned cinema workers. A new studio has been built in Sverdlovsk, and other studios in the remote east continue to produce new films.

At an art evening at Moscow House one may meet eminent representatives of Soviet Cinematography, although many are on locations in distant parts of the country, and a large number are at the front filming the fighting.

Vesvold Pudovkin has left to make a historic film about the famous Russian Admiral Nakhimov. Mark Donskoy is now filming "Unsubdued." Alexandrov has started a new comedy. Ermler is working on a picture about an army leader. Vladimir Petrov is preparing, as is Mikhail Romm.

A few days ago I met my old traveling companion, Igor Savchenko. He is now completing a color film, "Russian Sailor."

Thus the film industry goes on with the war; the war which we know will be won by the Allies. But we know that severe battles lie ahead, and that before rejoicing over victory, victory must be won. The price of victory is high in blood and toil. But we also know that the dark forces of Fascism are doomed, and that liberty-loving nations will soon breathe freely again. They will soon be rid of the Nazi monster. We know that this monster, sorely wounded on the fields of Russia, will be finished off in his own lair by the combined forces of the great Allied Nations.

An American who arrived here told me, "I am not surprised at the fact that you Russians are great dreamers. What surprises me is that your incredible dreams come true."

As a matter of fact, there is nothing remarkable about this. It is necessary not only to dream, but also to starve for the realization of one's dreams. It is necessary not only to talk, but to act and work and struggle.

It is upon this principle that our progress is based, and this applies to Soviet Cinematography, which well deserves to be termed "War Cinematography."

Kodachrome and Exposure Meters

By ALVIN WYCKOFF, D.Sc., A.S.C.

WITH a war going on and the manufacturer called upon to increase deliveries of Kodachrome to every fighting front, as well as to all the technical photographic departments back of the many battle fronts, Kodachrome for civilian purposes is becoming increasingly more difficult to purchase. As of today, almost the entire output of Kodachrome is delivered to the war agencies. Being so precious and hard to get, we shouldn't take chances on risk exposures. We must hit the bull's eye with every shot.

So the question is asked: "Does the operator or the meter make the correct exposure?" Obviously, the question is without sense, since the meter is an instrument without a thinking-mind but fashioned from out of the mind, unable to think for itself, operated by either an unthinking careless operator or by an operator with an analytical mind. Accordingly, results are bad or good.

Meters are of two kinds; good ones and bad ones. They are created for light-measurement or to determine light density. And like all scientific instruments, the purpose of their use, and their functioning ability had to be "thought out" according to certain formulas.

Let us decide then that exposure is determined by the operator with the aid of a meter, regardless of its make or kind. The determining factor then for the right exposure is the result of the "thought" that has been generated in the mind of the operator, in conjunction with the reading he obtained. Through the manner in which he used the meter to measure the light density of the illumination that fell upon, or was reflected from, the subject to be photographically reproduced will come correct or incorrect exposure.

In proportion to the analytical thought-force the operator has put into his problem will depend the perfection-quality of his reproduction. And, there are two kinds of operators; those who are careless, and others who are compe-



tent through attentive application of the problems to be understood.

There are two kinds of Kodachrome negative film. That which is used for "Daylight Exposure," and that which is used for "Artificial Light Exposure." Both of these films can be reversed successfully in their use with the application of the proper filter and altered exposurers, increasing the complication of thought process and meter manipulation.

In using "Daylight" Kodachrome, the exposure is governed by the natural light of day according to its density and color at a specified time of day.

In using "Artificial Light," exposure is governed by the amount (quantity) and placement of light by the operator, as well as the KIND of light. The KIND of light recommended by the manufacturer is the ONLY kind of artificial light to use.

It is also well to discard the many traditions and legends dealing with the mysterious intricacies of Kodachrome to be avoided. This influence of tradition, born of the failure of skeptics, has created a barrier of mystery around Kodachrome that has discouraged many beginners in their attempts to make use of it as an agent for color reproduction. There is nothing formidable about the use of Kodachrome film, it possesses no intricacies to explore. It is a medium of photographic, reproductive material, as simple to use effectively as any black-and-white negative material, when common sense intelligence is applied to its use.

A careful study of art literature of recognized merit, together with frequent visits to art galleries where the paintings of distinguished artists are on display, as well as an analysis of the color reproductions in the best magazines, will be of inestimable aid in establishing a balance of color sense in the mind of the individual desiring to reproduce

A scene such as the one above deserves careful use of exposure meter, says the author.

color subjects through the medium of Kodachrome photography.

As the artist uses his brush and colors to create the light and shade of roundness and depth in transferring to his canvas the composition of his mind-idea, so the color-photographer must create out of his mind the composition of his object, with light and shade, roundness and depth in color balance, to meet the requirements of his film-medium with exposure that will be in harmony with the light-density falling upon the subject he photographs.

Of all the manipulations that governs success for the color-photographer, the right exposure is the one that will either make success or failure the final result. There is no rule-of-thumb that controls this very important procedure. Exposure of color-negative film cannot be an automatic procedure because there are no two subjects that can receive the same treatment. Each subject must receive the same careful consideration that the first successful attempt received. The detail of exposure should be carefully noted and preserved for guidance in future work.

The use of meters is very necessary to determine approximate-correct exposure for Kodachrome. Time of day influences color-balance as well as the character of light at any specified time of day. This applies to exterior (out-of-doors) work.

For the serious minded color-photographer, a Color Temperature Meter is almost indispensable. With it he can check the color balance of all light sources. He can determine the correct "temperature" of the color being reflected from his subject, or the color-influence caused by the light falling

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Manart Kippen as the father of the first miracle child in "The Song of Bernadette".

Television Needs Hollywood's Ace Cinematographers

By HAL HALL

TELEVISION, like the ending of the war, is just around the corner. When the war is over television will be with us in a big way. Undoubtedly, television is destined to become one of the greatest mediums of entertainment and of news dissemination. Today practically everyone in the entertainment field is wondering what effect television will have on the picture industry and radio broadcasting.

On all sides you hear people talking about television, but practically all the conversations are extremely vague. Engineers speak of wave bands and mathematical equations, but rarely does anyone come down to earth and discuss the practical problems of television. You hear of television acting technique, but nobody explains what it is. The other day, however, this writer happened to mention television to Manart Kippen, stage and screen actor, best known in

films for his role of Stalin in "Mission to Moscow."

Kippen disclosed the fact that he acted in the first play that was televised over the N.B.C. station in New York City back in 1938, and that for several years he acted in and directed plays for televising over that station. He directed the first one-hour musical revue to go out by television. So, here, we thought, is a man who can tell us something about television technique and problems. He did.

"Television has come a long way," said Kippen. "Engineers and electrical geniuses have worked modern miracles, and will work more. BUT—television will never become perfect until Hollywood's top-flight cinematographers are brought in to solve the biggest problem in the successful televising of live plays.

"In all my television experience I was constantly hampered, as were all players, by the fact that all action had to

take place in a very restricted area, due to lighting and photographic difficulties. Unlike working on a film set where all parts and people are properly lighted and are sharply in focus, players to be in focus for television, thus far, have to be right out front in what might be termed close-up technique. If one player stands slightly in back of another he appears fuzzy on the television receiving screen.

"You see, while the greatest engineering minds have been brought into the development of television, no one seems to have become aware of the fact that only cameramen of the Hollywood quality can work out the lighting and photographic problems. To date all the lighting is perfectly flat and horrible. Only one size lens can be used in the camera, and all backgrounds are fuzzy and out of focus. I am referring now only to televising plays as produced in the television studios.

"It seems to me that Hollywood's ace cameramen could quickly find a way to light television sets so they would get the same results they get in the film studios. I sincerely hope that these cinematographers get into television as soon as the war is over and television activities are resumed in full force. I expect to go right into television directing as soon as television gets under way again, and when I do I am certainly going to advise and insist that we secure the cinematic brains and skill of the men who photograph Hollywood's motion picture films. Until the lighting and photographic problems are solved the actors will be cramped and action will be stilted in all television plays.

"I firmly believe that television is going to become a great factor in our daily lives. I believe television will revolutionize present radio broadcasting. Instead of just hearing the news over the air, we will see it happening. Every radio listener will sit in an easy chair in his home and both see and hear the special radio programs the commercial sponsors put on the air. You'll see the Charlie McCarthy-Bergen program, or Burns and Allen, Jack Benny, etc. I believe eventually there will be no radio broadcasting of today's type; that it will all be visual.

"That television was rapidly catching the public's fancy until the war interfered is evidenced by the fact that when television broadcasts first were sent out in New York by N.B.C. in 1938 there were only 50 receiving sets in the receiving area. When the war broke out there were several thousand sets in that same area. Can't you picture what will take place in the future when every radio set will be equipped with a television screen. On Derby Day all America will see the running of that great Kentucky racing classic. We now have special radio broadcasts from the front lines of war. On D Day we heard broadcasts from the scene of the actual invasion. In future wars—if there be fu-

(Continued on Page 285)

Improving Vacation Movies

By GLENN KERSHNER, A. S. C.

THE home movie camera — either 16mm. or 8mm. — has become as much attached to the American home and vacationist as the tooth brush or the automobile. Not only does this personal camera enable one to bring home a record of a trip, but it tells the story of the trip or vacation better than would a million words.

Screening these pictures to one's friends brings much satisfaction to both the friends and the one who has made the picture—unless there are so many imperfections in the film that it requires a running explanation and apology. Then the movie maker no doubt wishes he had been a bit more careful in his filming; had taken a little more time, and had planned his picture before shooting.

After viewing hundreds of amateur movies I have come to the conclusion that more than fifty per cent of the amateur cinematographers do practically no planning, but merely pick up a camera and shoot. On the other hand, I have seen some beautiful films made by amateurs; films that any professional would be proud to say he had made. Those were photographed by amateurs who plan their films and then very carefully carry out the plan.

In planning your travel films include in your plan *the proper handling of your camera*. More bad travel pictures are made by improper handling of the camera than by any other means. Do not pick up your camera and start to quickly shoot without the use of a tripod unless it is absolutely necessary. When you hold the camera in your hands it is likely to jiggle just when you want it to be steady, and often it is off level. Sometimes you can almost see the cinematographer breathe by watching the rising and lowering of the picture on the screen when the cinematographer has held the camera against his chest while photographing the scene.

Most vacation scenes can be made with a tripod, so why not use one and have steady pictures with composition of which you can be proud? Rarely can you have excellence in composition without the aid of a tripod.

Another factor to watch in filming your travel and vacation movies is the making of "pan" shots. Most amateurs have a tendency to "pan" too fast. In fact, many movie makers give you the impression they literally swung their camera around. "Pan" shots that are too fast are very annoying on the screen, and invariably call for apologies.

Some amateurs have told me they do

not know how to figure out the speed most pleasing in "panning." Here's a suggestion that might be of help. Suppose you are standing in the center of a room in which there are many windows. Say the wall space between each window is six feet. Close your eyes for a moment, then open them and look out one of the windows. How long does it take you to see everything outside that window? Use a stop watch and you will be able to know to the second. Repeat this procedure through every window in the room as you turn in a circle. When you have finished, you will know how long it should take you to make a "pan" shot that would cover the same space you looked at through the windows. You will discover if you whip your eyes around the room as fast as you make a lot of your "pan" shots that you won't be able to see everything.

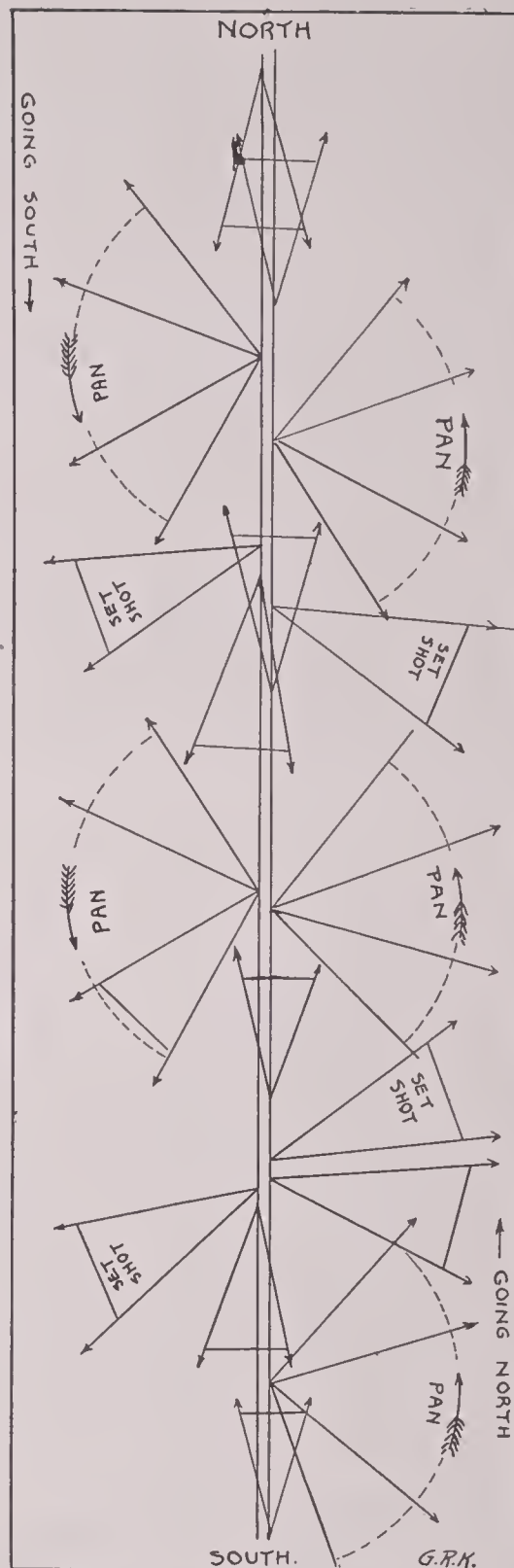
If you still have a tendency to "pan" too fast, set your camera at a faster speed and open the stop just a little more. Seldom do I "pan" a 16mm. or an Eyemo without setting the speed a little faster. This will slow down the action in the projection.

Now that we have finished with the fast "pans" let's take up the matter of travel continuity so that the "pans" of your travel picture will take the audience in the same direction you are traveling—so the audience will not feel they are going South one moment and then suddenly get the impression the car is backing at a terrific rate North.

For a number of years I made the Ford Educational Weeklies which took me across and up and down the United States many times a year. While on this job I worked out a system which you will see in the accompanying illustration.

Suppose you are going to make a trip from Hollywood to Seattle, Wash., and back. You start North and make all your "pans" on the right side of the road, panning from South to North. Then make some set shots, as indicated in the illustration. When you make these set shots be sure you use a tripod and keep your camera level. Should you see a shot on the left side of the road, going North, which you would like to "pan," "pan" it from North to South. This you will cut into your pictures you make on your return trip, so the "pan" to the Southward will be in continuity with the Southward movement of your trip.

Another suggestion to improve your "pan" shots. Study the shot carefully before you start shooting. Select a piece of excellent composition to start the "pan," and also select in advance the

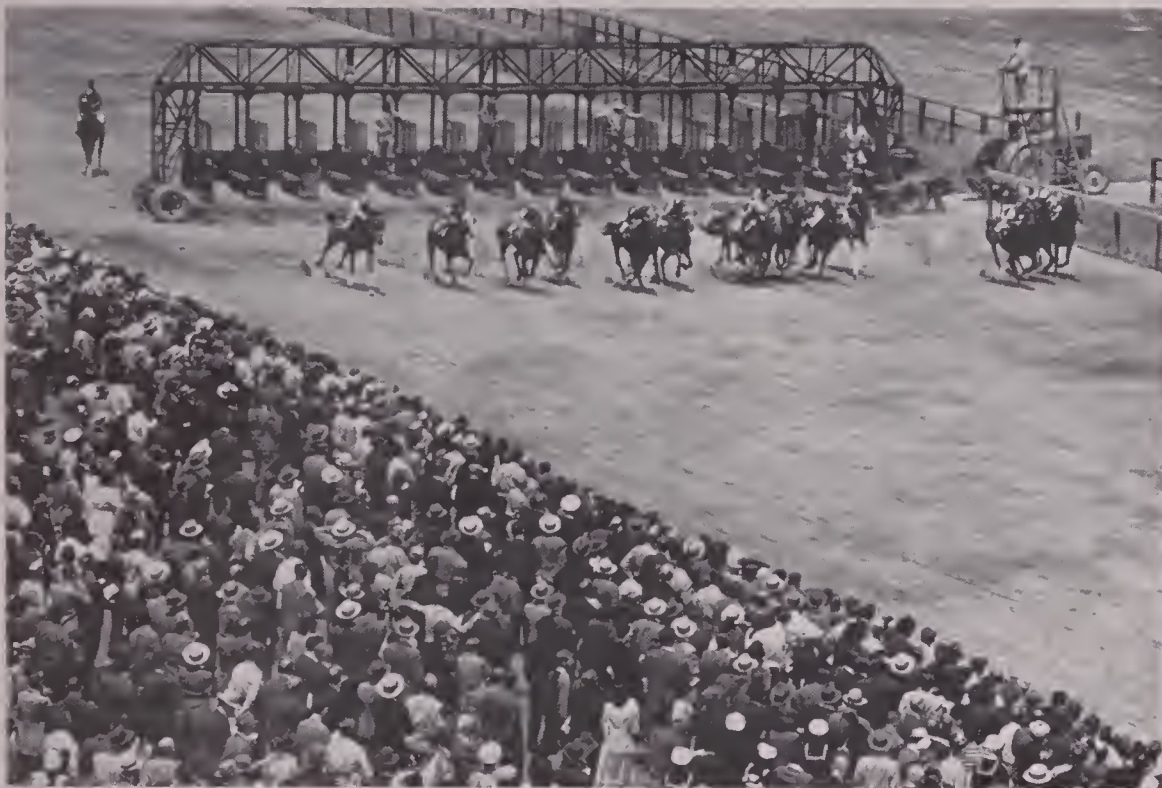


Above, Glenn Kershner's drawing to assist amateurs in making "pan" shots.

exact spot at which you will stop your "pan." That, too, should be something with pleasing composition. Take plenty of time to figure out your shots and you will be much happier when you get back home and are showing your films to your friends.

Another don't:—Never start to pan back again over the same scene. The only excuse you can offer for panning back is that you thought you might have gone by the scene too quickly. Take your time, "pan" slowly, and whenever possible use a tripod.

In the next issue of the *Cinematographer* I will take up the topic of exterior composition.



Kodak Announces Fastest Film For News Photographer

THE fastest film ever made available for the news photographer, who must, at times, work under extremely adverse light conditions, or for other work which must be made at fast shutter speeds with illumination that would be inadequate with the ordinary fast film, is announced by the Eastman Kodak Company.

This film, known as "Super Panchro-Press—Sports Type" is a modification of "Super Panchro-Press, Type B" which will still be supplied for all general work.

When developed as recommended, "Super Panchro-Press—Sports Type," is about twice as fast as the "Type B." As a result of the great increase in speed there is a slight increase in graininess and a slower rate of development.

For many sports pictures where ordinary high speed film is employed, it is necessary under adverse light conditions to use the lens at its widest aperture to compensate for the poor light and to gain maximum exposure with the high shutter speed that is required to stop the fast action.

With a "wide open" lens, depth of field is naturally limited. With the speed of "Sports Type" Film, however, a smaller lens aperture can be used and this results in a decided gain in overall sharpness.

Here are speed and recommended meter settings and recommended development in Kodak DK-60a.

Kodak Film Speed	Recommended Meter Settings*		
	Weston	G.E.	
Daylight... 1000	Daylight... 200	320	
Tungsten .. 800	Tungsten .. 160	250	

* When exposure must be reduced to a minimum, these settings can be doubled with little danger of serious underexposure.

Color Sensitivity: Panchromatic, Type B.

Filter Factors: (Correction Filters, Sunlight,

	K1	K2	G	A	B	C5	X1
Sunlight	1.5	2	3	7	7	5	...
Tungsten	1.5	1.5	2	3.5	7	10	3

Recommended Development:

Kodak Developer	Continuous Agitation (Tray)	Intermittent Agitation (Tank)
	68°F. (20°C.)	68°F. (20°C.)
DK-60a	6 minutes	8 minutes
D-19	5½ minutes	7 minutes
D-72 (1:1)	4 minutes	5½ minutes

These pictures, at left, taken at the Aqueduct track in New York were shot in the late afternoon on Kodak's Super Panchro-Press—Sports Type, with a 17-inch telefoto lens at 1/1000 of a second at f/16. The speed of the film permitting the relatively small lens aperture, resulted in the extreme depth of field. Each enlargement made from a PORTION of a 4x5 negative.

The Best Thing

To Be Said About

PLUS X NEGATIVE

Is That It Is

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Therefore — —

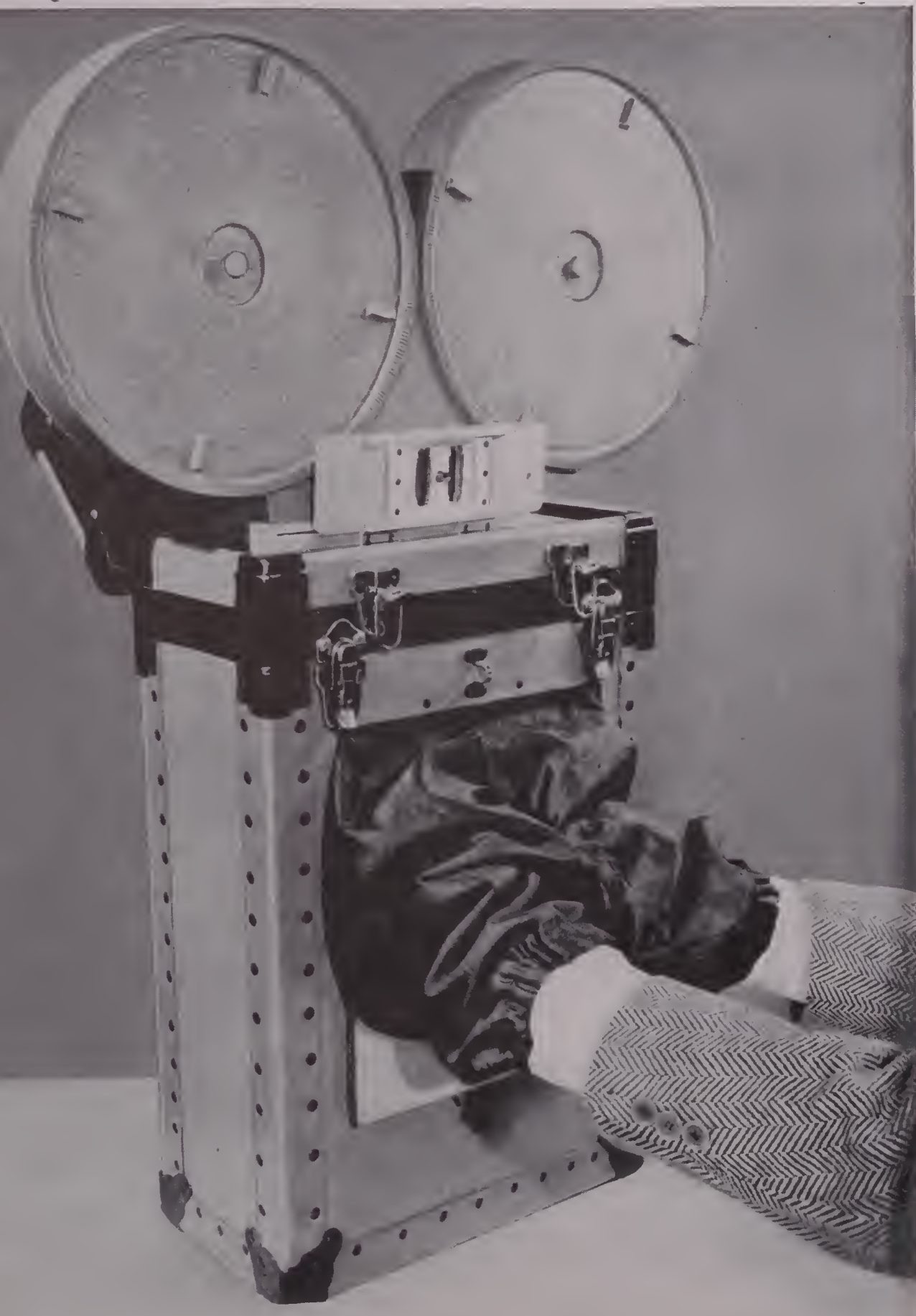
There Is Certainly

No Better Negative

J. E. BRULATOUR, Inc.
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'PROFESSIONAL JUNIOR

TRIPOD WITH REMOVABLE HEAD AND



The New Removable Head

★ The new removable head features the "Professional Junior"* Tripod. It is a friction type head from the tripod legs base, fastening nut. The tripod head can be used as an adaptor for low setups.

The friction type head gives super-tilt and 80° tilt. A generous sized pin service. "Spread-leg" design affords easy adjustments. A "T" level is built into the head. It can be set for 16mm E.K. Cine Special, B & H Eyemo (with motor), and with the new head is unconditionally guaranteed 5 years. The "Professional Junior"* Tripod With Removable Head can be sent upon request.

Field Development

★ The kit serves as a portable darkroom for motion picture film in the field on 400 ft. and 1000 ft. Mitchell, Bell & Howell adaptors are available for Cineflex models with three special size thermos bottles. More complete descriptive data with

"Professional Junior"* Tripods, Developmental Gauges made by Camera Equipment Bases, Signal Corps, Office of Strategic Services, also by many leading Newsreel companies and producers.

* Patent No. 2318910.

OR''★

"HI-HAT"

Professional Junior"* Tripod

... great flexibility to the versatile
... possible to easily remove the friction
... simply unscrewing a finger-grip head
... mounted on a "Hi-Hat" low-base

... pan and tilt action,—360° pan
... runnion assures long, dependable
... rigidity and quick, positive height
... superfine tripod. The top-plate can
... without motor; 35mm DeVry and
... hout alignment gauge. The tripod
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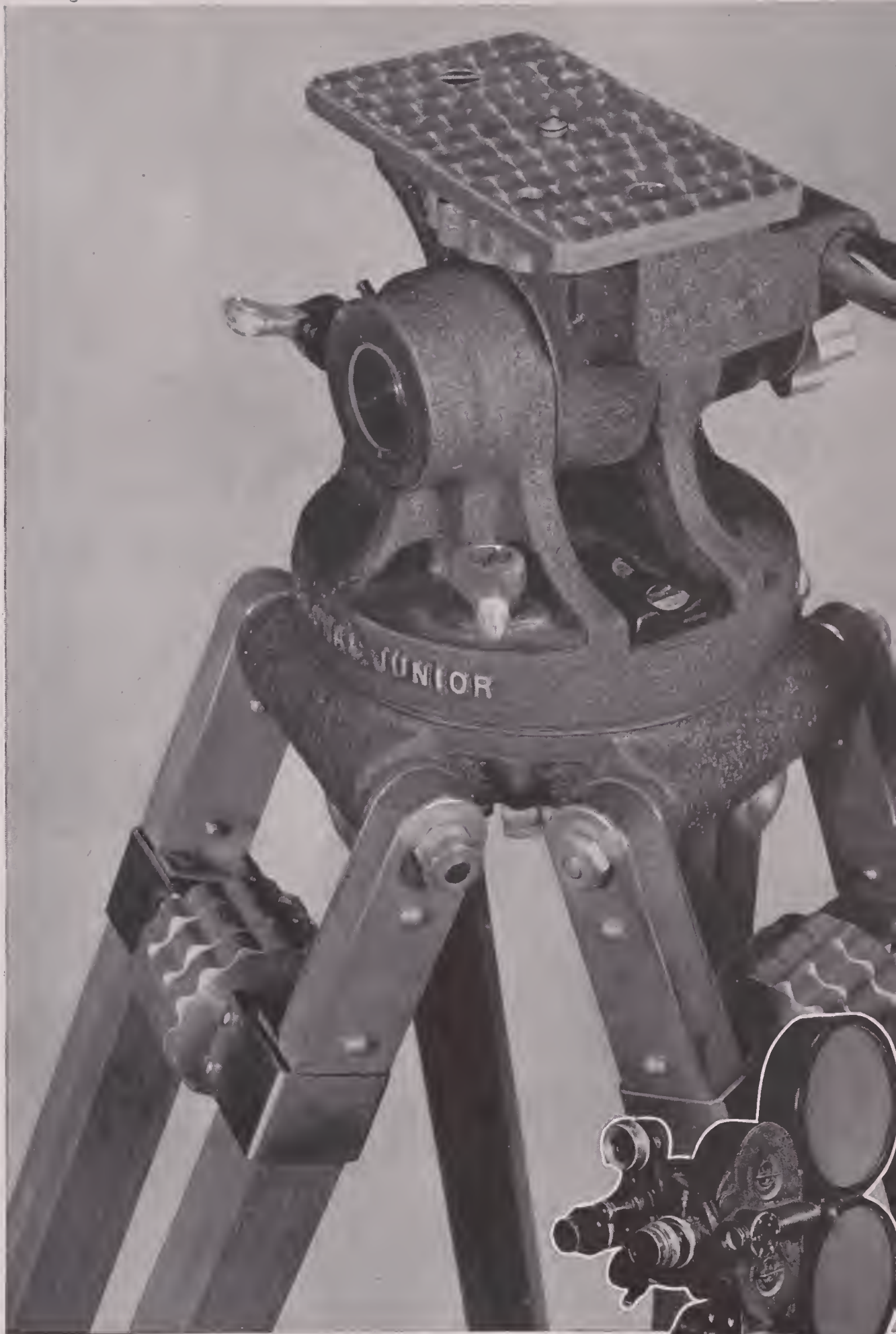
oping Kit

... or developing hand tests of 35mm
... tion. The kit is equipped to take
... ll and Wall magazines. A special
... s. The developing kit is furnished
... for developer, hypo and water.
... nt upon request.

... Kits, "Hi-Hats" and Shiftover Alignment
... are used by the U. S. Navy, Army Air
... vices and other Government Agencies—
... and 16mm and 35mm motion picture

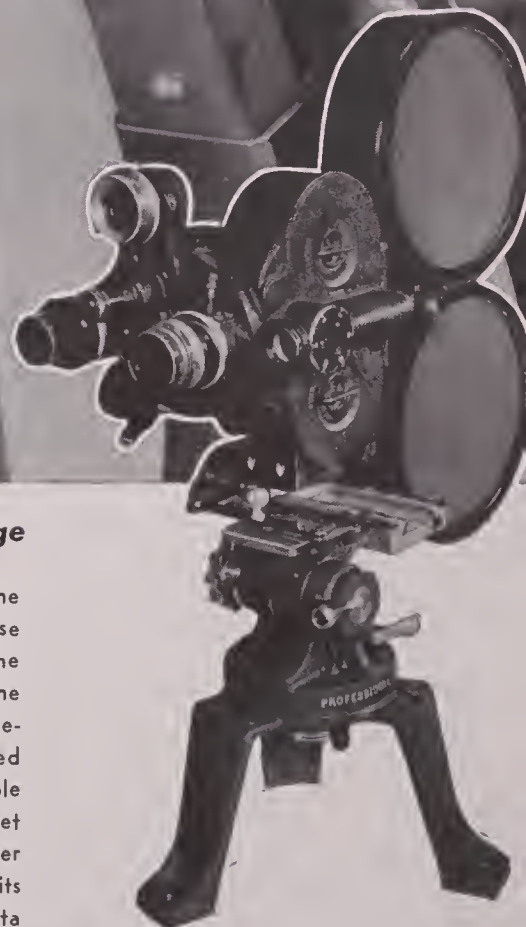
C. ZUCKER

EQUIPMENT CO.
NEW YORK CITY



"Hi-Hat" and Shiftover Alignment Gauge

★ Illustrated is the B & H Eyemo camera mounted on the Shiftover Alignment Gauge and "Hi-Hat" low-base adaptor. The "Hi-Hat" low-base adaptor takes the "Professional Junior"* tripod head for setups where the tripod legs cannot be used. The Shiftover device (designed by Camera Equipment Co. and patent applied for), the finest, lightest and most efficient available for parallax correction for the Eyemo Spider Turret prismatic focusing type camera. The male of the Shiftover attaches to the camera base permanently and permits using the regular camera handle if desired. Further data about the "Hi-Hat" and Shiftover will be sent upon request.



THROUGH the EDITOR'S FINDER

ON July 6th, Colonel S. W. Stanley, Signal Officer, 9th Service Command, presented the Research Council of the Academy of Motion Picture Arts and Sciences with a Certificate of Appreciation from the War Department and the Chief Signal Officer for its cooperation in the war effort. Of particular significance to those interested in motion pictures were some of his remarks.

"As was anticipated long before this war began, photography has become one of its mighty weapons on the front, behind the lines and at home," said Col. Stanley: "The value of film as a record of action in war had already been demonstrated, but the great possibilities of film as a training aid had not begun to be fully appreciated until a relatively few years before the beginning of the present emergency.

"The use of training films has now developed into one of the most potent factors of the Army training program. By this means, the technique of training has been virtually revolutionized. Visual training aids have demonstrated conclusively that they could in less time teach more, that could be remembered longer, than any other medium of instruction. Training films caught and held the interest of millions of recruits and gave them the confidence, so vital to war, to go out and do the job that was expected of them. The use of action pictures as training media and as valuable historical records, likewise had demonstrated their tremendous importance and effectiveness."

If training films can revolutionize the training technique of the greatest War Department in the world, what magnificent possibilities lie ahead for films in training for peacetime activities! If films can be used to teach men to kill and to destroy, how much more can they do to teach men to build, both physically and mentally, for a great peacetime future!

Now the Editor's face is really red!

On page 235 of the July issue of this magazine appeared an advertisement from J. E. Brulatour, Inc., distributors of Eastman Films. It SHOULD have read:

1944—

This year marks

The Fiftieth Anniversary

Of the first public showing of
Motion Pictures—

Imagine our embarrassment when we discovered—too late—that a typographical error, which we should have caught, made it the FIFTEENTH Anniversary.

We're sorry.

CHRISTMAS may seem a long time away in the month of August, but if you who have relatives and friends in the fighting forces overseas do not start thinking about Christmas now those fighting men may not receive the presents you want them to have on Christmas.

The Army and Navy Departments have designated the period between September 15 and October 15 as the time for mailing Christmas packages and Christmas greeting cards to the men overseas. So, you should start your Christmas shopping for overseas RIGHT NOW. The following communication from the Post Office Department is of vital importance to those boys at the fighting fronts:

"Mail is medicine. Don't delay its use for our armed forces. Their Christmas parcels and Christmas cards should be mailed as early as possible. Furnish our overseas personnel with medicine they will appreciate . . . your mail. The Post Office Department will accept overseas parcels for mailing from September 15th through October 15th. Be sure that all parcels meet the various postal requirements as to size, weight and careful wrapping. Christmas cards should be sent only as first class mail and are to be mailed during this period. Give them your zone number so your answers will not be delayed. Use V mail for personal correspondence. Be sure to address all parcels correctly, including the addresses on the inside wrapper as well as on the outside. Let's not disappoint our boys overseas by mailing either incorrectly or late.

"Overseas mail affects the life of all America. Nearly five million boys are serving overseas in the various branches of the armed forces and in the Merchant Marine. It is estimated that each will receive an average of three Christmas parcels. To guarantee delivery by Christmas you are urged to mail your overseas

parcels and cards as soon after September 15th as possible. October 15th is the final day for all overseas mail. Be sure to address your gifts distinctly and correctly, including a duplication of the addresses on an inside wrapper."

HANS KOENEKAMP, one of the best liked members of the American Society of Cinematographers, walked into my office the other day looking happier than I had ever seen him look before. When he showed me a letter he had just received from his son, Fred, stationed somewhere in the South Pacific, I knew why he was happy.

That letter, written to his Dad on Father's Day, was one of the finest letters I have ever read from a Son to his Father. I begged Koney to let me publish part of it, because I feel that every Father who reads it will be inspired. So, here are the first two paragraphs: "Dear Dad:

A rumor has been started here that today is Father's Day. I really don't remember the date, but I don't want to take any chances. This letter, no matter if it's early or late, will mean the same. I find it very hard to find words that will tell you what I have in mind. When you get right down to it, I guess there are no words that really express a son's feeling for his Father. Not only do I want to thank you for the home, food, clothing, and my pride and joy, the car, but Dad, thanks for all the understanding, the advice and help to get me started in the world. You're tops, Father, and there's no getting around it.

"I hope to get married when I get home. I hope some day to have a home of my own. If I can make my wife and family as happy as ours is I will feel as though you had a lot to do with it. I hope to be a lot like you. A very happy Father's Day to you, Father, and may we be together on your next one."

No wonder Koney is proud of his son in the service!



WE are pleased to report that our last appeal to our readers for suggestions as to the kind of articles they would like to see in the Cinematographer has brought forth a very considerable number of replies. We shall try to give you what you have asked for, but please keep on sending in the suggestions. We need a lot more.

We could also use more stories from those mechanically-minded men who are building their own equipment. Perhaps you have perfected some unique gadget that is helpful. Send in pictures and description, and we will be glad to print it for the benefit of our readers.

Movies . . . Vital Records of War

THESE "stills" are typical of the motion pictures made by our Armed Forces. Photographic units, with which men from the motion picture industry are prominently identified, provide essential information of immediate tactical, technical, or strategic value. And these first-hand motion pictures have tremendous morale value when released for public showing.

★ (Left) Invading the Marshalls.
Photo by U. S. Army Signal Corps.

★ (Below) Advancing at Tarawa.
Official U. S. Marine Corps Photo.

One of a series of
advertisements by
KODAK testifying to
the achievements of
the movies at war



EASTMAN KODAK COMPANY, Rochester, N. Y.

J. E. BRULATOUR, INC., *Distributors*

FORT LEE

CHICAGO

HOLLYWOOD

Army Movie Theatre In The South Pacific



ENLISTED men of the 4th Signal Photo Laboratory Unit have built an outdoor theatre near their living quarters on the Island of New Caledonia in the South Pacific, and are seeing movies under primitive conditions, yet with the best sound and picture quality in the entire South Pacific.

Using a screen made from a piece of salvage canvas, and a projector and sound system put together from available sources, technicians of the Unit have obtained results which in the opinion of the technical experts are comparable to the best deluxe theatre quality obtained in the States.

Most of the members of the Unit are studio technicians enlisted in the Reserve Corps under the sponsorship of the Military personnel Committee of the Research council of the Academy of Motion Picture Arts & Sciences. The unit is commanded by Major Gordon S. Mitchell, in civilian life Manager of the Research Council.

Pictured here attending the movie at the 4th Signal Photo area from left to right:

Pvt. Harry M. Anderson, foreman, North Dakota; Pfc. Frank Nowibilski, Chicago, Illinois; 2nd Row: Pfc. Clyde S. Jenkins, Morgantown W. Va.; Pfc. Jack H. Brookshaw, Elmwood, Wisconsin; Pvt. Cleve R. Smith, Hollywood, Calif.; Pvt. Raymond E. Cox, Evansville, Indiana; T/4 Philip de Lara, Hollywood, Calif.; Pvt. Charles W. Stickley, Philadelphia, Pennsylvania; Pfc. Alexander J. Madison, New York City; T/3 Herman H. Fischer, Hollywood, Calif.; Pfc. Anthony J. Rapisarda, Brooklyn, New York City; 3rd Row: S/Sgt. Fred Rola, New York City; Pfc. Robert Platt, Ware, Massachusetts; Pvt. A. W. Smith,

College Corner, Ohio; S/Sgt. Oram K. Wetzel, Hollywood, Calif.; Pvt. John W. Moore, Bessemer, Alabama; Pvt. Frank Episcopo, Wilmington, Delaware; Pvt. Joseph J. Downey, Brooklyn, New York; Cpl. Otto J. Enslen, Milwaukee, Wisconsin; Sgt. Frank L. Reed, Ravenna, Ohio; 4th Row: Pvt. Elmond Clark, Whelan, New York; Pvt. Erie Clark, Whelan, New York; Pvt. Alan Dienhart, Hollywood, Calif.; Cpl. Robert Christianson, Ogden, Iowa; Pfc. Edmund J. Galanty, Detroit, Michigan; Pvt. Irwin W. Meyer, Los Angeles, Calif.; Pfc. Vartan Chirvanian, Bogato, New Jersey; Pfc. Harry Richmond, Brooklyn, New York; 5th Row: M/Sgt. William Claridge, Hollywood, Calif.; T/s Malcolm Bulloch, Hollywood, Calif.; T/4 William Robertson, Hollywood, Calif.; T/5 Marvin H. Sigwind, Benkelman, Nebraska; Sgt. Robert W. Gibbs, Uehling, Nebraska; Captain Raymond Windmiller, Hollywood, Calif.; Major Gordon Mitchell, Hollywood, Calif.; Sgt. James Court, Santa Barbara, Calif., running the projector.

Above photo shows arrangement of screen and seats of the improvised theatre built by enlisted men of the 4th Sig. Photo Lab Unit, New Caledonia, South Pacific. The screen size is 7½ feet x 9½ feet. The throw is 47 feet. (Photo by Pvt. Stickley.) Upper left photo of the men of the unit enjoying the show was made by T/5 Frank Saraceno.

Attention, Please!

THE two tables that appear on this page as "Table I and Table II" were omitted from Mr. L. H. Bedford's article on "Television Picture Definition," which appeared in the June, 1944, issue of the CINEMATOGRAPHER. We print the tables now so that those who are interested in the article will have them to refer to.—The Editor.

TABLE I

Illumination	"1	"3	"5
50 lux approx.	1/2000	1/1300	1/1410
200 lux approx.	1/2200	1/1695	1/1680

TABLE II

Vertical Viewing Angle.	n (net)	R.	N.	T.	f.	Remarks
1/6	450 (s)	5:4	254,000	16 m.s.	7.94 Mc/s	Sat.
1/6	675 (i)	5:4	254,000	32 m.s.	5.95 Mc/s	Sat.
1/10.5 (sat)	385 (i)	5:4	82,000	32 m.s.	1.92 Mc/s	B.B.C. Service
1/8.1 (sat)	500 (i)	5:4	139,000	32 m.s.	3.26 Mc/s	
1/4	675 (s)	4:3	600,000		14.0 Mc/s	Kinema
	1000 (i)					

s = sequential scanning. i = interlaced.

The Houston Corporation

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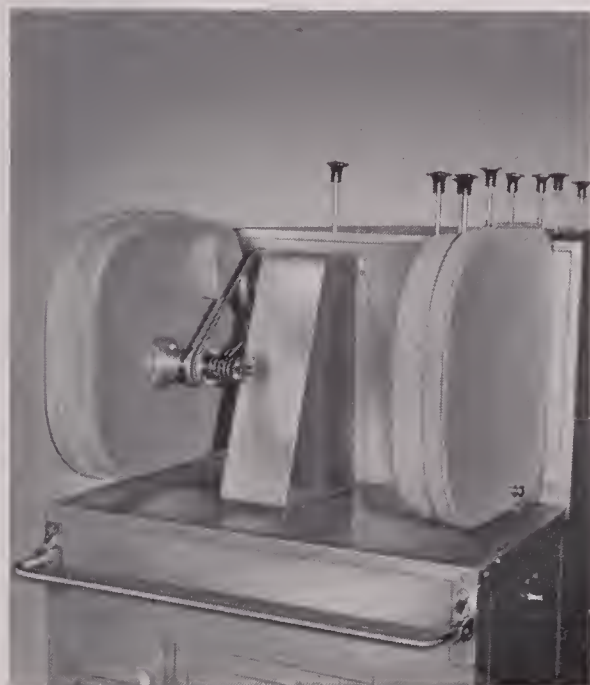
Los Angeles 25, California



Processor with solution tank covers open.



Darkroom as packed for shipment but showing printer threaded as for operation.



Close-up of loading and take-off magazines.

The Houston Model 9 Processing, Printing and Editing Kit for 16mm Motion Picture Film.

This machine is for negative or positive film; capacity 120-360 feet per hour. Cycle of processing is accomplished in 35 minutes, including drying. Designed for portability and limited space and measuring only 18" by 37" by 36½". Any of the components of this kit may be purchased separately. See story and other illustrations on pages 5 and 6.

FROM CAMERA TO SCREEN — HOUSTON

Motion Picture Studio and Laboratory Equipment—Developing Machines—Printers—Camera Cranes and Dollies
Miniatures—Mechanical Sets—Engineering and Design Work—General Machine and Jobbing Work

AMONG THE MOVIE CLUBS

Westwood's Exposition

George Loehrson, in charge of general promotional activities, has asked us to extend to all movie makers and movie clubs a cordial invitation to attend the Third Annual Amateur Movie Makers Exposition, sponsored by the Westwood Movie Club of San Francisco. The Exposition will be held Friday evening, September 29th, at St. Francis Community Hall, San Fernando and Ocean Avenue, San Francisco.

For the past two years this event has been known as the Gadget Exposition. Gadgets will again be featured, but in streamline fashion under the guidance of Eric Unmack, gadget chairman. Jesse Richardson heads the committee which will select the top-flight amateur films to be screened that evening.

The Technical Committee, under chairmanship of Dr. I. C. Gobar, is planning a short, unique stage presentation, details of which will be kept secret until the presentation is made. Fred Harvey will be Master of Ceremonies. Chairman of the Exposition is Club President Don Campbell. Others in key spots are Miss Edna Spree, publicity; Joe Pissott, program.

San Francisco Club

President Louis M. Perrin of the San Francisco Cinema Club reports that the July meeting of his organization was an interesting one. Of particular interest was the screening of films the members made in the zoo on their recent field trip.

Ed Sargeant showed 800 feet of 16 mm films of Kicking Horse Trail in Canada, Waterwheel Falls on the Tuolumne, and Boulder Dam. Closing the program was "Arizona Holiday," made by President Perrin on 8mm. The film includes a boat trip up Mead Lake into the lower Grand Canyon.

Southern Cinema Club

Southern Cinema Club held two meetings during July. One was a picnic meeting at Southgate Park. After lunch the members spent the afternoon shooting pictures. The second meeting was devoted to the viewing of uncut films of the members.

La Casa Club

Close to 200 persons attended the July meeting of the La Casa Movie Club of Alhambra, California. The program of films consisted of "Mt. Shasta" by D. E. Arnett, "Indian Dances" by H. A. McHenry, "Scenic Utah and Parks" by Earl Martin, and a Walt Disney film, "The Amazon Awakens."



Pocatella Camera Club

A large group attended the fourth meeting of the newly organized Pocatello Camera Club at which a contest was held for the best print depicting the name of the club. The contest was won by R. E. Brown, and the print is reproduced on this page of the Cinematographer.

The print has been adopted as the emblem of the club and will be imprinted on all dues cards and club stationery. The emblem consists of the head of Indian Chief Pocatello in a double circle, within which is printed the name of the club.

In addition to winning the contest, Mr. Brown gave an illustrated lecture on "Essentials of Photography." He used 33 slides as illustrations. Two films were also screened: "Our Flowers" and "Hunting and Fishing in Idaho."



Trees

Brooklyn Club

The following officers have been elected by the Brooklyn Amateur Cine Club for the forthcoming year:

President, Horace Guthman, reelected.
Vice-president, Herbert Erles.
Secretary, Mrs. Beatrice Katz.
Treasurer, Francis Sinclair, reelected.

Board of Directors: Charles Benjamin, Irving Gittel and Charles J. Ross.

Utah Cine Arts Club

Five films were screened for the members of the Utah Cine Arts Club at the July meeting. They were "Dog Daze" by George Brignand; "4 Gallon Vacation" by Keith Walker; "Once Upon a Midnight Dreary" by Pete Larsen, and two films from the Coordinator of Inter-American Affairs. The latter were "The Bridge," a documentary film on the transportation problem in South America, and "Wealth of the Andes."

Tri-City Club

At the last meeting of the 1943-44 season, the Tri-City Cinema Club elected the following officers for the coming year:

President, Tom Severs of Moline.

1st Vice-president, A. R. Bruns of Davenport.

2nd Vice-president, Margaret West of Davenport.

Sec'y-Treas. Spitznas of Moline.

Trustees: Harry Lytle of Davenport, Ward D. Paley of Rock Island, and Mrs. Charles Snyder of Rock Island.

The club now reports a membership of more than sixty movie makers.

Syracuse Movie Makers

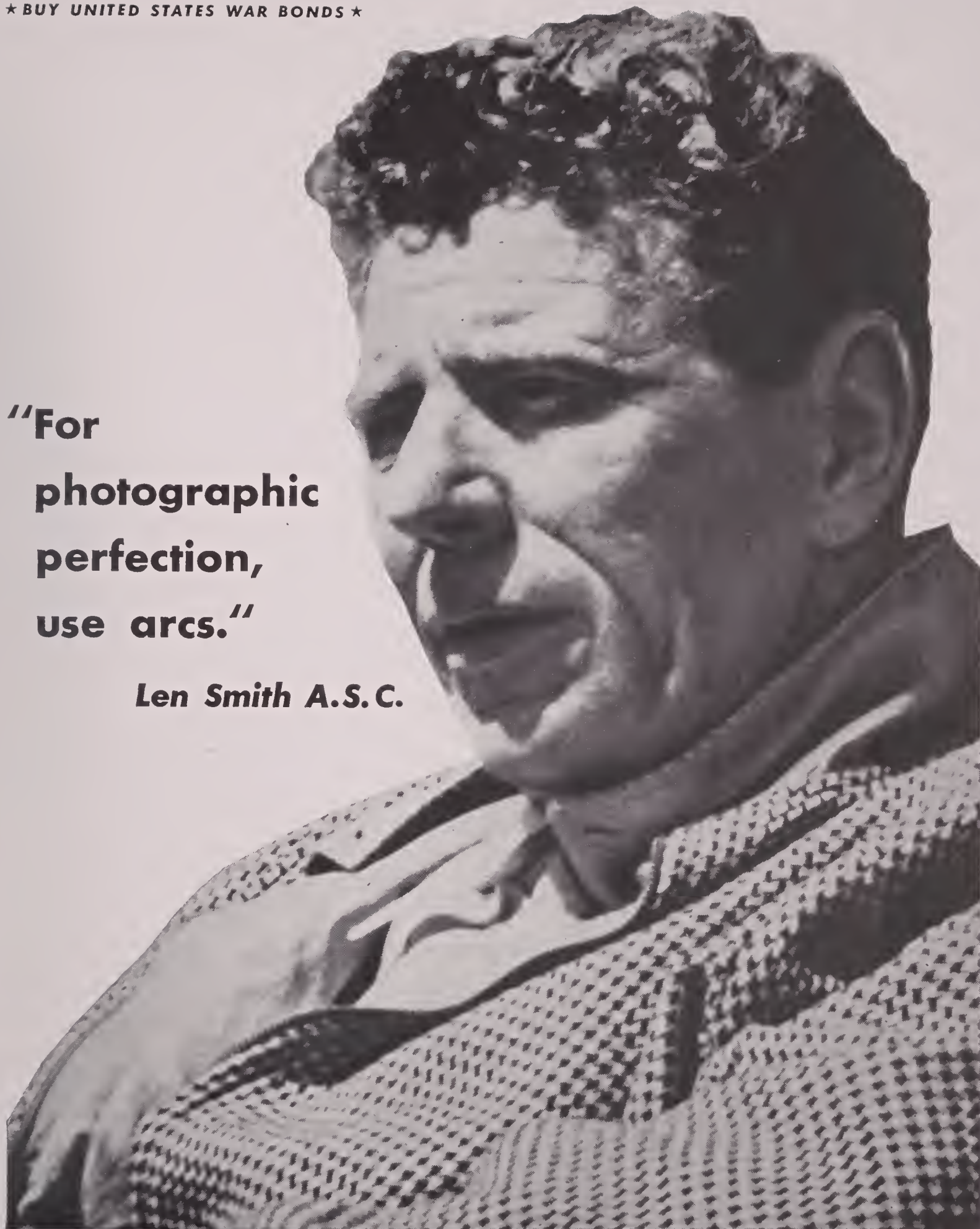
Highlighting the July 5th meeting of the Syracuse Movie Makers was the first showing of the new 16mm Ansco Color film in Syracuse. Two projectors were lined up and one projected Ansco Color, the other Kodachrome, at the same time. Ansco Color was projected on one half the screen; Kodachrome the other half. Further tests will be made by club members in the near future.

Also on the program was a film of a golf match between Bob Hope and Bing Crosby, made by Donald Steves of the Long Beach Cinema Club. This was followed by a U. S. Signal Corps newsreel of the Normandy Invasion. A scenic of Bryce Canyon closed the meeting.

*Please send
your club
news early*

**"For
photographic
perfection,
use arcs."**

Len Smith A.S.C.



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Recent Advances In The Physics of Color

(Continued from Page 259)

ber of papers, two were cut from the same sheet but submitted as different batches, the readings showing a repetition accuracy to within 0.1%.⁴

ALTERNATIVE COLOR SPECIFICATION SYSTEMS

Turning now to the criticism of the form of the C.I.E. resolutions, measurements made by MacAdam⁵ of the standard deviation of colour matching in various parts of the colour triangle give a measure of the noticeability of colour differences, and indicate that the C.I.E. triangle is for example very bad for purposes of estimating errors of reproduction.

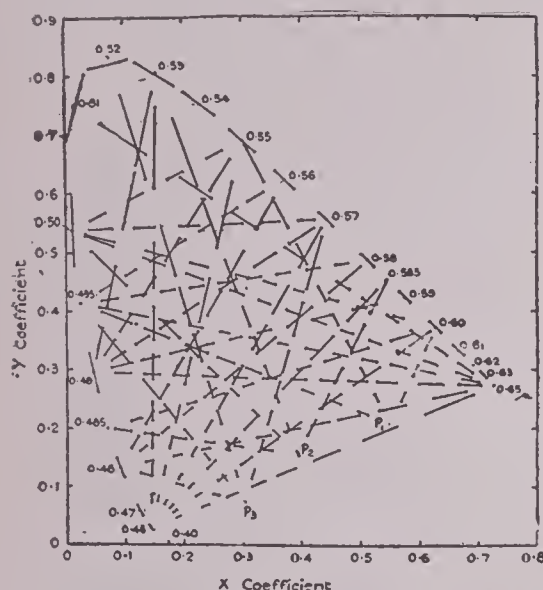


Fig. 2. Comfortably noticeable color differences plotted in the C.I.E. triangle. Observer, W. D. Wright.

Wright has obtained comparable results⁶ which are shown in Fig. 2. Though they refer to comfortably noticeable differences of colour in mixtures of pairs of spectral lights, they agree in the main with those of MacAdam. Wright has pointed out⁷ that the lack of agreement where it exists is significant, notably in the colours between blue and red (purples and magentas).

The same results of Wright's are plotted again in Fig. 3 on a modified colour triangle due to Breckenridge and Schaub⁸ which they call the Rectangular Uniform Chromaticity Scale triangle. This is a projective transformation of the C.I.E. triangle. There is a lot of room here for experiments on the effects of field size, adaptation, contrast, brightness level and so on, before these results can be applied with confidence to questions of color reproduction.

COLOR CINEMATOGRAPHY

I should like to comment on a few points about additive and subtractive processes. For kine-projection subtractive processes hold the field, and the

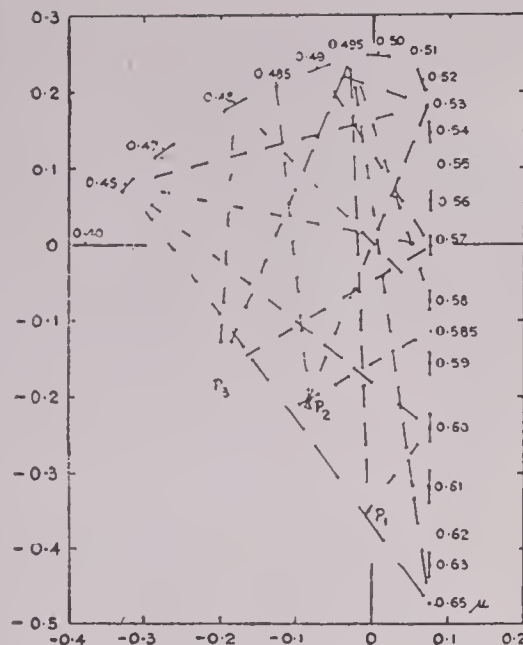


Fig. 3. Comfortably noticeable color differences plotted in the R.U.C.S. triangle. Observer W. D. Wright.

main reason for their superiority is the fact that highlights can have an optical density of only 0.04 as in black-and-white, while an additive process has a luminous efficiency of the order of 30% whether it be a mosaic screen, sequential or triple projection, corresponding to a highlight density of 0.50. Members of this Society will not need to be reminded that screen brightness is a paramount consideration.

Unless something startling by way of illuminants or projection optics is forthcoming, the position will stay as it is. It is possible that we shall get even higher aperture lenses using the new types of optical glass now becoming available, sufficient to make additive processes quite satisfactory for projection, but of course subtractive processes would gain as well, and we may expect that manufacturers will concentrate on subtractive methods.

THE FUTURE

In common with most physicists I would rather make warning prophecies than over-optimistic ones, but there are several things which I hope we may see in the next few years. With all the activity there is in the preparation of dyes, we can hope to advance towards the theoretically desirable characteristics of subtractive dye images. The mathematical theory of color masking correction is ahead of its practical application; one can hope that the theory will be unified and made more intelligible, and simpler practical methods developed for carrying out masking. We are already beginning to get experimental observations on the relative importance of residual reproduction errors, and it would be very desirable to push that work along with considerable vigor.

Lastly, the need is now being recognized more widely⁹ for relating the

complex processes of vision to the physics of color photography before one can know how to produce a reproduction giving the same subjective appearance as the original scene, or a desirable illusion of fantasy.

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Color Filters and Their Use

(Continued from Page 260)

100% ND—Extreme contrast neutralizer; same action as 75% ND but with greater softening effect.

200% ND—Extreme contrast neutralizer; same action as 100% ND but with still greater degree of softening effect; requires very strong sunlight to be used; in combination with 88 A is used as a sun viewing glass.

Neutral Density filters are neutral in their action on all colors; they provide a means of reducing the light transmission through the lens, necessitating the opening of the lens diaphragm, which naturally produces a softening effect similar in action to neutralizing contrast.

Pola Screen—For controlling strong glare and brightness of sky and water; harshly lit and contrasty subjects; a blue sky can be darkened to about the same extent as with an A filter without changing the color of the foreground; dissolving reflections through glass or water without changing color density; the maximum results are obtained with the sun's rays at 90 degrees angle to the camera; may be used in combination with any filter; two Pola Screens together form a variable neutral filter; the variable range being up to 32% transmission.

New Fairchild Documentary

PRODUCTION of the first documentary motion picture in color on the subject of molded plastic-plywood construction of multi-engined aircraft has just been announced by Joseph E. Lowes, Director of Public Relations for Fairchild Engine and Airplane Corporation.

The Princeton Film Center of Princeton, New Jersey, will produce. Gordon Knox, the Film Center's Executive Director, will supervise.

Aces of the Camera

(Continued from Page 262)

don't all sit down in the two front rows, are as numerous as ever. So action pictures are still being made, and Jim Brown makes his share of them. The glamor and excitement of the old days still exists for him as he follows his action along curving mountain roads, or stands behind his camera facing a cattle stampede. The pictures Jim makes don't win Oscars. But they call for camera skill and "know how," under the most exacting conditions sometimes, that most of the boys on the big lots never have to meet.

Jim started getting his camera "know how" in 1912 with the Edison Company in the Bronx. He was hired for \$15.00 per week. And to make the deal more attractive they let him be his own assistant. His first assignment, he remembers, was to shoot up from the floor of a canyon at a car which was to come over the brink and hurtle down the cliff to his feet. He was most anxious to make good, and in his anxiety lost sight of the danger to himself that would result if the car failed to fall as scheduled. For half an hour before the shot was ready he practiced the coordination necessary for him to crank the camera with one hand, while cranking on the tilt-head with the other.

At first he couldn't get it. He had to turn one way with one hand at one speed, and the other way with the other hand at another speed. Like rubbing your stomach and patting the top of your head at the same time. But at last he thought he had it. By concentrating on nothing else he felt sure he could do it. So the car was pushed up to and over the edge of the cliff.

As soon as the car appeared in his finder Jim started cranking away. And as it teetered on the edge he cranked his tilt-head, and, refusing to be distracted by anything, swept his lense down with perfect coordination at precisely the previously determined speed. Only when the camera was pointed at the ground directly in front of him did he stop, and then with the satisfaction of a job well done. But when he looked at the place where the car should have been, it wasn't there. And come to think of it, he had heard no crash. When somebody yelled, "Look out!" he was amazed to see the car hurtling down the cliff towards him. There were only moments to safety. Jimmy grabbed them and jumped. It seems that while Jim was practicing his superb coordination the car was still teetering on the brink.

That was the first of many narrow escapes while officiating at the camera. But he doesn't seem to worry, he firmly believes he leads a charmed life. An incident that happened to him at the tender age of six might have had something to do with that belief.

Jim was playing on the roof of his

house with some of the other little boys. They had a rope around the chimney stack, and were pulling themselves up on it. Playing steeplejack, or something. It was a three story house, with a steeply slanted slate roof; which, as any mother knows, is a perfect playground for a six-year-old boy. It was Jimmy's turn and he had pulled himself almost up to the chimney when the bricks gave way. For a horrible moment he slid towards the edge of the roof; and then, followed by a shower of bricks, shot out into thin air. All the other little boys ran home, wondering what they would tell their mothers. But they need not have worried. Jimmy had landed on a clothesline, which had bounced him up and down a couple of times, and then ricocheted him into the safety and security of a pile of manure.

About 1914, when the big industrialists began to compete with one another to see who could produce the best movie, Jim and his brother Russell went into the business of making such pictures. He remembers one they made for the Midvale Steel Co., in Volcan, Mich., when the temperature at the top of the shaft, where they had some shots to take, was 20 degrees below zero. Down in the mine, where some more shots had to be made that day, the temperature was 130 above, with fearful humidity. He had to stop every minute or so to wipe the sweat from the camera. Looking back at the

camera equipment that was available, and the film stocks then in use, to say nothing of the portable lighting one could get down a mine in those days, a successful production like that has all the earmarks of a miracle.

In 1916 Jim and Russell Brown invented, and went into the manufacture of the Russell Camera. Its salient characteristic was that it had a magazine on either side of the lense, a design that formed a natural matt box out of the camera case and did away with the necessity of a protruding mattbox. It was very light, the case being fabricated of bakelite, and was most remarkable because of the complete silence of its movement. In fact the movement was so silent that Roy Vaughn, who was using it to shoot a scene with Johnnie Hinds, says the comedian thought it was a gag when he didn't hear the familiar camera noise, and refused to believe that the camera had a movement at all until they proved it to him.

A deal was all set with a big firm of instrument makers to manufacture the camera when World War I broke out. The contracting firm had to back out because of government war commitments. So the new Russell Camera patents were merged with the equally new Mitchell Camera patents, and when that deal was consummated Jim joined up.

(Continued on Page 280)

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MANY wounded soldiers have been sent back from the battlefronts of the world to military hospitals in the States. Some of them are interned for weeks, some for months, or indefinitely, but the community life that develops in these hospitals has produced renewed evidence of American ingenuity.

The boys hold contests, publish newspapers, inaugurate new projects to make the long day of a convalescent more bear-

able. *Convalescent Capers* is one such periodical published at Lowry Field. *Capers* writes about the highlights of hospital society at the Field; paints a picture of what our wounded servicemen opine. The above picture is excerpted from a recent issue which illustrated Bell & Howell Filmosounds projecting movies in the wards. The boys receive these films gratefully—give a vote of thanks to the machines that make this recreation possible.

Aces of the Camera

(Continued from Page 279)

He started out as a private driving a truck, and ended up as a captain with his own film unit. Capt. Jim Brown, of the famous Rainbow Division, piled up an enviable record as a soldier. He served eleven months at the front, and with his other decorations, is entitled to wear the ribbons of almost every famous American engagement.

Three cameras were blown out of his hands during those eleven eventful months. On one of these occasions he was unhurt after having been blown twenty feet by an exploding shell. No wonder he feels he lives a charmed life.

From all accounts, Jim was a lot more successful getting the action stuff in France rather than the personalities. On the way over, on the *Amerika*, in the first All-American convoy, he took with him the first Akeley to go to France. A camera that Carl Akeley had been reluctant to let him have because he was not satisfied that it was in perfect order. But in the tests he made on the board it worked perfectly. Perfectly until he went to get some shots of his chief, Gen-

eral Russell of the Signal Corps, who was on board. Then it began perforating. Six times Jim tried to get a shot of his general, working meanwhile on the innards of the camera like a man possessed. But each time it was aimed at the general it perforated. It became quite a joke between them.

On another occasion General Pershing paid a surprise visit to review some troops up near the front lines, while the Huns were dropping shells in the vicinity. It was a unique opportunity, and Jim quickly set up for the shot while the good general prepared to face the camera from his most photogenic angle. But no sooner had Jim started to grind away than he heard the end of the film go through. It seems that the assistant he had still found the whizzing of German shells a disconcerting novelty and had forgotten to reload. But feeling that it was no time to explain matters, Jim just kept grinding away while the general smiled, shook hands with the commanding officer, got into his car and drove away. For weeks after Jimmy heard that General Pershing was wanting to know what had happened to the film that was shot that day. If the general should

hear of this now we sincerely hope he won't be too hard on Jimmy or his assistant.

He lost a lot of cameras, but he made a lot of friends while he was in France. His first meeting with Ira Morgan, A.S.C., was in the front lines at St. Mihiel. And his friendship with the late Larry Darmour, at whose studio he still holds forth, and for whom he went to work in 1926, was begun on the battlefield. Even the girl who was to become Mrs. Jim Brown, a Pasadena girl serving in France for the Red Cross, he met during the fortunes of war. As a matter of fact, it was to meet her family that he made his first trip, after the war, to California.

In the silent days Jim filmed the Karl Dane and George K. Arthur comedies, the Barney Google series, the Louise Fazenda series, and the comedies featuring Toots and Casper, Alberta Vaughn and Al Cook, the Three Fat Men, in addition to the series that gave Mickey Rooney his debut as Mickey McGuire.

When sound first came in Jim saved his studio a lot of money by putting Fearless movements into their Bell and Howells and hanging a motor, in a cork and sponge rubber bag, from the tripod. The drive was accomplished by a flexible shaft.

In recent years his talents have been used on the "Crime Doctor," "Whistler," and "Ellery Queen" series. Currently he is working on his fifteenth serial. Serials always provide the most in thrills for the cameraman as well as the audience. But they're not all in the script. Jim has been caught on top of a blazing building, been dragged by a speeding locomotive, and had almost every known type of wheeled vehicle turn over too close to him for comfort. But, it's all in a day's work, he says.

No wonder he took up smoking!

Bell & Howell Announces New Lens Cleaning Fluid

OPTI-KLEEN, the new lens cleaning fluid recently launched by Bell & Howell Company, is said to be the answer to the problem of *efficiently* cleaning surface-coated glass. A reflection-reducing process, surface-coating was introduced as a wartime necessity, and will be a peacetime "must."

The appreciable superiority of surface-coated lenses is matched by Opti-kleen, especially designed to keep pace with this lens improvement. Reflection-reducing coatings may be severely damaged by the use of a cleaning material containing wax, so Bell & Howell laboratories brought forth this doubly-effective solution for any lens or finder cleaning, acclaimed superior due to the absence of *all* solids, which eliminates the possibility of residue from the cleaning fluid being left on the surface of the glass.

Review of an Industrial Motion Picture

Title: "YOU ARE SPERRY."

Sponsor: Sperry Gyroscope Company, Inc., Great Neck, Long Island, N. Y.

Type: Induction or employee orientation. Length: 1000 ft., 16mm sound, black and white, reduction print from 35mm original.

Producer: Audio Productions, Inc.

Narrator: not shown.

Continuity: well handled.

Technique: excellent.

Sound quality: good.

Availability: address inquiry to sponsor.

Content Comment

This Sperry film is well conceived and expertly executed. It was apparently designed for use in an "induction" program to acquaint new workers with the extent of the Sperry operations, and to impress the employees with the importance of their individual efforts in the battle of war production.

As indicated by the film's title, "You Are Sperry," the general theme of the production is to emphasize the worker's personal contribution to the combined effort of the company. This theme is cleverly presented in several rapid moving sequences.

The film actually starts, rather abruptly, with a sub-title introducing the President of the company, who talks synchronously to explain that "the motion picture following, reflects the spirit of the Sperry company," etc. His talk stresses the vital part their products play in winning the war, as modern military strategy depends upon machines and instruments, such as those produced by Sperry.

Following his talk, is a good montage or series of short views of the exterior of various company buildings, with an accompanying musical background. Altho this sequence actually reflects the growth and progress of the organization, the narration explains that "buildings of brick and stone and glass, are only symbols or outward manifestations, and the real Sperry is YOU, the factory and office worker." At this point a crowd of workers is shown approaching the camera, as the film title, "You Are Sperry," finally comes on the screen superimposed over the crowd scene.

This variation from the conventional introductory routine usual to such films, is an interesting treatment. The personal approach continues as we are taken past the guards, and into the plant. Various departments are shown, then close-ups of workers, several of which are named as being workers who recognize the vital importance of their jobs. As they assemble various instruments, scenes dissolve in to show planes and ships where the instruments are used.

Later, another executive talks, followed by plant scenes to emphasize the cooperation, and coordination of all departments. An animation sequence shows the location of the various Sperry plants, and also illustrates how suppliers in key centers send a continuous flow of parts and raw stock. Other well handled scenes

cover the historical background of the company, continuous research and development of new products, employee activities, safety regulations, etc.

Emphasis throughout the film is on the vital part Sperry instruments play in the war effort, building up the patriotism displayed by the workers who realize their united effort will help to win the war. Individual workers are named as they are shown, in several scenes.

The closing sequence dramatically shows troops marching towards the camera, as a chorus is heard singing the Star Spangled Banner. The chorus continues faintly in the background, as the narrator reads a poetic title on the screen—"If our lines should form and break, because of things you failed to make," etc.

The entire film runs smoothly, and is expertly produced. It should seriously impress the war worker with the importance of his or her job.—Ed Pyle.

NOTE: We will be pleased to have Mr. Pyle review industrial films each month in the Cinematographer. We do ask the sponsor of each film sent for review to enclose the following data: Purpose for which the film is intended; producer; narrator, or; indicate if filmed on 35mm then reduced, or on 16mm negative and positive print, or 16mm reversal with contact print, or 16mm print from negative made from reversal original, etc.; sound recording—direct 16mm or 35mm optically reduced to 16mm, or 35mm re-recorded to 16mm; availability or restrictions, on loan or rental.—The Editor.

A Big Job

Aerial photography is reported to be providing 90 per cent of military intelligence to the U. S. Army and Navy in the present war.

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Film Production In Argentina

(Continued from Page 261)

night. Sixty trained technicians work in three shifts to keep up with the process-demands. A special night shift develops studio negative and turns out "rush" prints, so producers may see the result of each day's work before starting a new day. This has saved many thousands of pesos and many headaches for these producers who work on limited capital and short shooting schedules.

To those people not familiar with technical facilities in Argentina let me say that the equipment now used in the laboratories of which I write stacks up with that used in any laboratory anywhere; the same as is used in studio laboratories in the United States. Although the automatic developing machines are made in Argentina, each machine contains many parts purchased in

the States. The pumping equipment is the same as that used on most American machinery of the same type. Some of the ten automatic developing machines are used for negative developing exclusively; others for "dupe" negatives; others for release prints, and one for 16mm. reduction prints. The only machine that is not made locally is the DeBrie Automatic Developing Machine, purchased in France before the war. This machine is used exclusively for release prints.

In the printing room we find Bell & Howell Automatic Printers, De Brie automatic printers. Twelve printing machines run day and night.

Walt Disney used the Alex Laboratories to make his Spanish version of "Fantasia" and other Disney features.

Yes, film production down here in the Argentine is dabbling in its own color, too. Alex Color is a color process which has been developed in the Alex Laboratories, and has been highly successful in local films. However, due to the shortage of raw stock and chemicals, the color process has been suspended for the time being.

The shortage of raw stock has forced the studios to reduce production to a minimum. The film situation is so critical that a producer has to think twice before even ordering a rush print of all his takes for the day, knowing he won't have enough positive film on which to make his release prints. It is really a serious situation. Some producers have plenty of negative stock, but hesitate starting a new film until something is done to assure sufficient positive film for the necessary release prints. Generally, the producer needs from twenty to thirty release prints, which from the Hollywood point of view isn't many, but sometimes they can't get enough film for that small number of prints.

To partially relieve the shortage Carlos Connio has started to reclaim old rolls of release prints. He removes the emulsion from the celluloid and applies a new emulsion of his own fabrication. Working with him on creating a new emulsion has been the Argentine Gov-

ernment Explosives Factory. Some of this reclaimed film is good enough to use in making "rush" prints. Even these "rush" prints are then again reclaimed and used for more "rush" prints. This Argentine-made emulsion is good enough for "rush" prints, but it can't be recommended for release prints if the Argentine film producers want to maintain their present standards of quality production.

There are many other film laboratories in Argentina that serve the film industry. They all work on a smaller scale, but strive for quality printing and developing, for there is now no room for a laboratory that cannot deliver quality prints. Yes, film production in the Argentine is decidedly one that now demands quality in every step of film making.

Tropical Problems In Aerial Camera Maintenance

(Continued from Page 263)

kept as air-tight as possible, with a vent in the roof, and by holding the humidity at less than 40 per cent the corrosion, rust and fungus is cut to a minimum. This procedure is highly recommended for the storage or any optical equipment in the tropics.

On the basis of the field men's reports, base plates and heating surfaces of camera magazines, which used to be bare aluminum and magnesium, are now anodized and dichromated. Steel plates are cadmium plated wherever possible. Only the most critical heat-treated parts are not cadmium plated because of the impossibility of machining them to the proper tolerances when plated. These parts, however, are in the minority, and can be carefully watched for rust formation.

Tested glues are now being used in place of the old animal glues, and heavy felt padding has been eliminated from carrying cases and trunks to prevent retention of moisture and the growth of fungus. Cork linings have been eliminated from heated cameras, and an outer jacket, constructed of fiber glass, which has been tested for its fungus resistance properties, has been substituted.

Experiments are being conducted in the University of Pennsylvania's "jungle laboratory" by Dr. W. G. Hutchinson, and he has submitted a fungicide which Fairchild is giving further tests in the field by incorporating it with glues and lacquers. This fungicide showed "very promising" results after exposing the equipment coated with it in the tropical jungle room.

One of the achievements in the Ford Motor Company's war effort is the Aircraft engine program at the Rouge plant. This division has delivered more than 21,000 Pratt & Whitney twin-row, 2,000-horsepower aircraft engines.



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Radiant Starts Program to Please Returned Vets

UNUSUAL enthusiasm from both service men and industry has greeted the inauguration of a post-war plan for assuring proper placement for men and women after they leave the U. S. Armed forces. Developed by the Radiant Manufacturing Company, makers of Screens for motion picture, slides and film strip projection, this program is now in full swing and is bringing some surprising results. The specific object of the Radiant plan is to obtain the registration of all men and women who are engaged in visual training, film production and film distribution, or who had visual equipment experience in this field after the war can be located.

Special registration cards for this purpose have been prepared by the Radiant Manufacturing Company and distributed at points where all types of training and entertainment films are stored and projected, and where equipment is serviced. These cards list the previous experience and background of each registrant, as well as the specific fields in which post-war interest is indicated.

These fields include the production and distribution of films and the sales, servicing, manufacturing, retail and wholesale distribution of projection equipment. Registration cards are beginning to pour in to Radiant headquarters. When the files are completed, the lists of these registrants will be sent to manufacturers, distributors and retailers in the visual training industry.

"Ravaged Earth" Brings Fame to M. L. Moody

MARK L. MOODY, a businessman in China for 23 years, was "just another amateur photographer" until the sensational scenes of the war in China, taken with his Bell & Howell 16mm. Filmo-70DA, were blown up to 35mm. size and presented at movie theaters throughout the country under the title "Ravaged Earth." One of the most amazing facts of Mr. Moody's story is that his was a strictly amateur undertaking! The authenticity of the film, which comments on the wreck of human life in China, is emphasized by the very lack of slick cinematic technique. Mr. Moody and his Bell & Howell motion picture equipment were constantly subjected to the impact of explosion and the inevitably rugged existence in a bombed and shell-shocked land where slaughter permeated the atmosphere.

A grimmer film than "Ravaged Earth" is not likely to come out of the present war. The film, which was released some months ago, still is being shown in neighborhood movie-houses in many cities. Mr. Moody is at present in the United States . . . and he still uses the same B & H Filmo with which he recorded the scenes for "Ravaged Earth."

FILTER COMPARISON TABLE

Showing Effect of Filters with Daylight Exposure on Various Colors Using Panchromatic Film

FILTER USED	COLOR PHOTOGRAPHED			
	YELLOW	RED	GREEN	BLUE
K 1	No Change	No Change	No Change	No Change
K 2	Very Slightly Lighter	Very Slightly Lighter	Very Slightly Lighter	Very Slightly Darker
K 3	Slightly Lighter	Slightly Lighter	Slightly Lighter	Slightly Darker
Aero 1	Slightly Lighter	Slightly Lighter	Slightly Lighter	Slightly Darker
Aero 2	Lighter	Lighter	Lighter	Much Darker
G	Very Light	Light	Lighter	Very Much Darker
21	Very Light	Very Light	Very Slightly Darker	Very Dark
23 A	Much Lighter	Very Light	Much Darker	Very Dark
25 A	Very Light	White	Very Dark	Very, Very Dark
29 F	Very, Very Light	White	Black	Black
70	White	White	Black	Black
88	White	White	Black	Black
3 N 5	Slightly Lighter	Slightly Darker	Slightly Lighter	Slightly Darker
5 N 5	Slightly Lighter	Slightly Darker	Slightly Lighter	Much Darker
X 1	Slightly Lighter	Dark	Much Lighter	Darker
X 2	Slightly Lighter	Dark	Very Much Lighter	Darker
56 B	Much Lighter	Very Dark	White	Very Dark
58	Much Lighter	Very Dark	White	Very Dark
Neutral Density	No Color Change	No Color Change	No Color Change	No Color Change

This chart is intended to serve only as a general guide. Unusual conditions—range of shades of the various colors photographed, together with the variation of the color sensitivity of the different films used, prevents this chart from being accurate.

Above is a reproduction of a filter comparison table from the American Cinematographer Hand Book and Reference Guide. This book, written and compiled by Jackson J. Rose, A.S.C., is jammed with information for professional and amateur cameramen. From time to time we will print charts and other information from it. The Hand Book may be purchased through the American Cinegatorapher business office.

Business Film Library at N. Y. City College

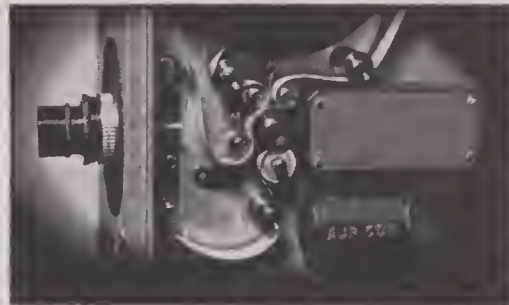
FORMATION of a Visual Aids Division at the Evening Session of the City College School of Business and Civic Administration, New York City, which will make available a unique library of business films to students, business firms and other organizations, was announced today by Dr. Robert A. Love, director of the session. Operation of the Division will begin in September.

Believed to be the first Library of business films in the nation, it will be used to acquaint commercial and industrial personnel, veterans, and other groups with the newest technique of salesmanship, marketing, retailing, business management and other operations. Films will be prepared by the School of Business on numerous phases of business and will also be gathered from business firms and other agencies.

"This library," Dr. Love declared, "is being sponsored not only as a service to business students in one of the largest schools of its kind in the world, but also to serve other schools, institutions and business organizations who wish to avail themselves of this unique collection. The vast amount of research which has often gone into the building of business films will thus become a useful tool in helping retrain veterans as well as others."

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Television Needs Ace Cinematographers

(Continued from Page 266)

ture wars, which God grant there won't—the people on the home fronts will see the fighting on the fighting fronts.

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Mr. Kippen was born in Sevastopol in the Crimea, but came to America as a lad of 12. He has been on the stage for thirty years, many of them as an outstanding Broadway player. For years he watched his fellow players leave Broadway and go out to Hollywood and films. But he was one of the "die-hards" who couldn't be persuaded to leave the stage for the flickers.

Several years ago, however, he went to Hollywood on a visit. That did the trick. Director George Cukor, with whom he had worked on the stage in New York, cast Kippen in "Keeper of the Flame." He followed that with a role in "A Woman's Face," and then he was in films for good. He did not attract much attention until he played Stalin in "Mission to Moscow." From that he went right into the role of the father of the first miracle child in "The Song of Bernadette." He has just completed a role in "Roughly Speaking"—incidentally, so has his wife, Jeanne Wardley—and is here to stay, at least until television gets going again. He is a great admirer of Hollywood's cinematographers.

"One of the things about the Hollywood cinematographers that impresses me," explains Kippen, "is the painstaking way they light and photograph us character players. Before I came to Hollywood I thought only the glamour stars received much photographic attention. I know better now, for Hollywood's cameramen are proud of their art, and want EVERY shot to be photographically perfect. By golly, they make them perfect, too."

Additional Duties for Terrill

C. L. TERRILL, vice president of the Fairchild Camera & Instrument Corporation, New York, has been given the additional duties of secretary of the company by the board of directors. The former secretary, James S. Ogsbury, Jr., is now in the Army.

Mr. Terrill joined the Fairchild company in 1934 to organize and direct the patent department. Before that he had engaged in patent research, had been a U. S. Army air corps officer, and flying instructor to the Canton government of China.

Lack Elected Director

AT the 20th annual meeting of the Radio Manufacturers Association held in Chicago on June 6th and 7th, Frederick R. Lack, vice president and manager of the Radio Division of the Western Electric Company, was elected a director for a term of two years. Mr. Lack recently served as director of the Army-Navy Electronics Production Agency in Washington.

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New Sales Set-Up For National Carbon

A NEW sales set-up under which all company products will be handled nationally from seven divisional offices is being installed by National Carbon Company, Inc., it is announced. Four of the new offices are in operation and the others will be added by October 1.

All sales activities in the Southeast have been consolidated under a new Atlanta Division office. This division will comprise, in addition to Georgia, the states of Virginia, North and South Carolina, Alabama, most of Tennessee, and Florida. J. F. Warnell, former manager under the "district" system and recently stationed at New York, has returned to Atlanta as division manager. The organization is using the former district address—41 Marietta Street, Atlanta, 3.

C. C. Joslyn is manager of the new Dallas, Texas Division. The former district offices at 200 South Ervay Street, Zone 1, have been retained. This division will comprise, in addition to Texas, the states of Arkansas, Oklahoma, New Mexico, Mississippi, Louisiana, and part of Tennessee.

At Kansas City, A. C. Bryan has taken over as Division Manager. The new offices, which occupy the same location, 19th and Campbell Streets, Kansas City, 8. The division will comprise, in addition to Missouri, the states of Kansas, South Dakota, Wyoming, Nebraska, Colorado, Western Illinois, and most of Iowa. Orders from electrode and anode customers in the Kansas City Division will be received at the Dallas office.

On the West Coast, R. P. Tolles, manager of the former Pacific Coast Division, succeeds to the direction of the new San Francisco organization. The Assistant Managers are A. R. Miller, former district manager at Portland, Oregon and O. B. Rendahl. The new division staff will occupy the old address at 114 Sansome Street, San Francisco, 4, and from this headquarters will be directed sales in California, Washington, Oregon, Western Montana, Idaho, Utah, Arizona, and Nevada.

The three division offices yet to be opened will be located at Chicago, Pittsburgh and New York.

New Filmsound Releases From Bell & Howell

IT AIN'T HAY (Universal). No. 2530, 8 reels. Sparkling comedy centered on a horse that has seen better days, with side-splitting slapstick interludes by screen and radio's funniest team—Abbott and Costello. Available from September 19 for approved non-theatrical audiences.

PRISONER OF ZENDA. No. 5789, 10 reels. Graustarkian romance in the grandest manner. Ronald Colman, Madeleine Carroll, Douglas Fairbanks, Jr., Raymond Massey, Mary Astor. Selznick release.

HE'S MY GUY (Universal). No. 2531, 6 reels. Human relations comedy-drama involving the staging of morale-building shows in defense plants. Timely, interesting, diverting. Joan Davis, Dick Foran, Irene Hervey, Gertrude Niesen, Mills Bros. Available from September 26 for approved non-theatrical audiences.

HOME VEGETABLE GARDEN. No. 618, black-and-white. Twenty minutes of authoritative, detailed information on victory gardening, by James H. Burdette, head of the National Garden Bureau and garden editor of the Chicago "Sun." Contains special advice to late season gardening. A sequel to **GARDEN FOR VICTORY**.



Above: a scene from the new Bell & Howell Filmsound feature release, "He's My Guy", available from Sept. 26th.

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FOR SALE—Mole-Richardson microphone boom; Studio Equipment Co. camera dolly complete with blimp and dural tracks; complete 16mm. Berndt-Maurer studio channel with recorder and two film sound phonographs; Berndt-Maurer single system camera complete with amplifier, noise reduction etc.; Cine Kodak Special cameras; and miscellaneous camera equipment. Wire or write Coronet Productions, Glenview, Ill.

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Filming landing operations with a Magazine Ciné-Kodak in North Africa.

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TOUGH GOING IN THE ALEUTIANS. Wind, rain, snow, dense fog . . . Our operations in this sphere were as difficult and hazardous as any our forces have undertaken.

But Ciné-Kodak worked right along with the Army—showed it could stand up to the severest tests. Remember that superb film, "The Aleutians"? It was largely filmed with Ciné-Kodaks.

TOUGH GOING IN THE SOUTH PACIFIC, when our Marines are moving in on one of the Jap bases. Remember Tarawa—up to that time the hardest fight in the whole 146 years' history of the Marines? Ciné-Kodaks were called into service to film that battle, too.



"The Aleutians" largely filmed with Ciné-Kodak Specials.

All during the three days of fighting these cameras were on the go constantly and behaved superbly. Result—that memorable documentary film, "With the Marines at Tarawa."

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Magazine Ciné-Kodaks were used in the battle of Tarawa.

On all the fighting fronts you'll find Ciné-Kodak doing its job—operating with accuracy and dependability under incredibly rough conditions. Literally thousands of Ciné-Kodaks are in Army, Navy, and Air Force hands, contributing to war training, and to the most complete war record ever attempted in movies.

* * *

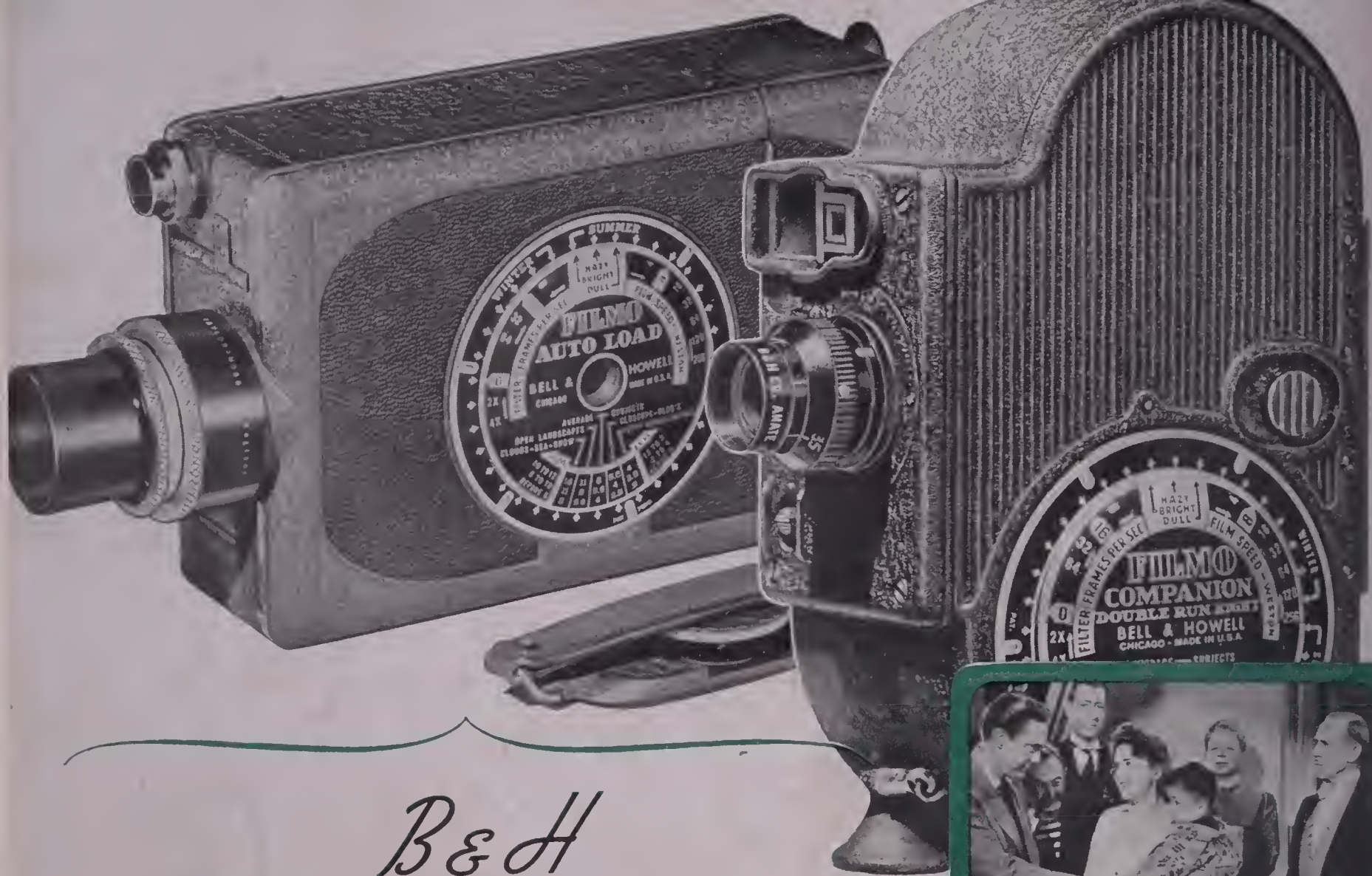
If you own a Ciné-Kodak—be proud of it. Take care of it. Use it, these days of limited film, to make movies of the home front, to show your soldier or sailor when he comes back . . . Eastman Kodak Company, Rochester, N. Y.

U.S. Signal Corps cameraman in action with a Ciné-Kodak Special.



Ciné-Kodak

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B & H makes the camera YOU want!

Maybe you've never made a movie before . . . or perhaps just a reel or two with a borrowed camera . . .

. . . maybe you're a dyed-in-the-wool movie maker from 'way back.

But wherever you fit into this fascinating hobby that's *more* than a hobby . . . there's a Filmo Movie Camera just made for you.

Now, take the two we've illustrated up above there—the one on the right is the Filmo Companion 8 . . . about the

size of your hand . . . and *more* practical features* never were squeezed into a smaller, neater package.

The other is the famous Filmo Auto Load—a 16mm. model that loads with a film magazine. You can switch from monochrome to color movies in broad daylight without fogging a single frame . . . easy as putting a pack of cigarettes into your pocket. But there's more than that. Read below what either of these top-notch Filmo models gives you in really *usable*, levelheaded features.

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- 1 A variety of camera speeds including single frame exposure for making cartoon movies, titles, diagrams, and so on.
- 2 A built-in spyglass viewfinder that shuts out extraneous light, dust, dirt. Can't break or get out of whack . . . and "What You See, You Get!"
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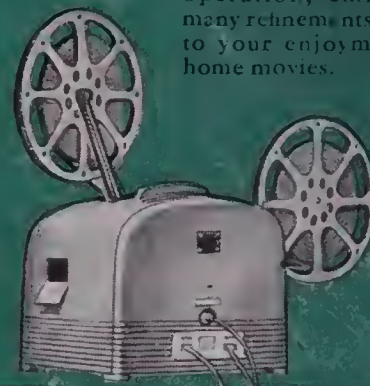


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If you've thought of Deanna Durbin only as a lovely girl with a lovely voice, you have a pleasant surprise in store when you see Universal's *The Amazing Mrs. Holliday* . . . for in this new Filmosound Library release, she proves herself a real, dramatic artist. *The Holliday* has played to full houses for months and now you may have it for showing at approved non-theatrical locations through the B&H Filmosound Library. Send for a catalog of other Filmosound Library successes.

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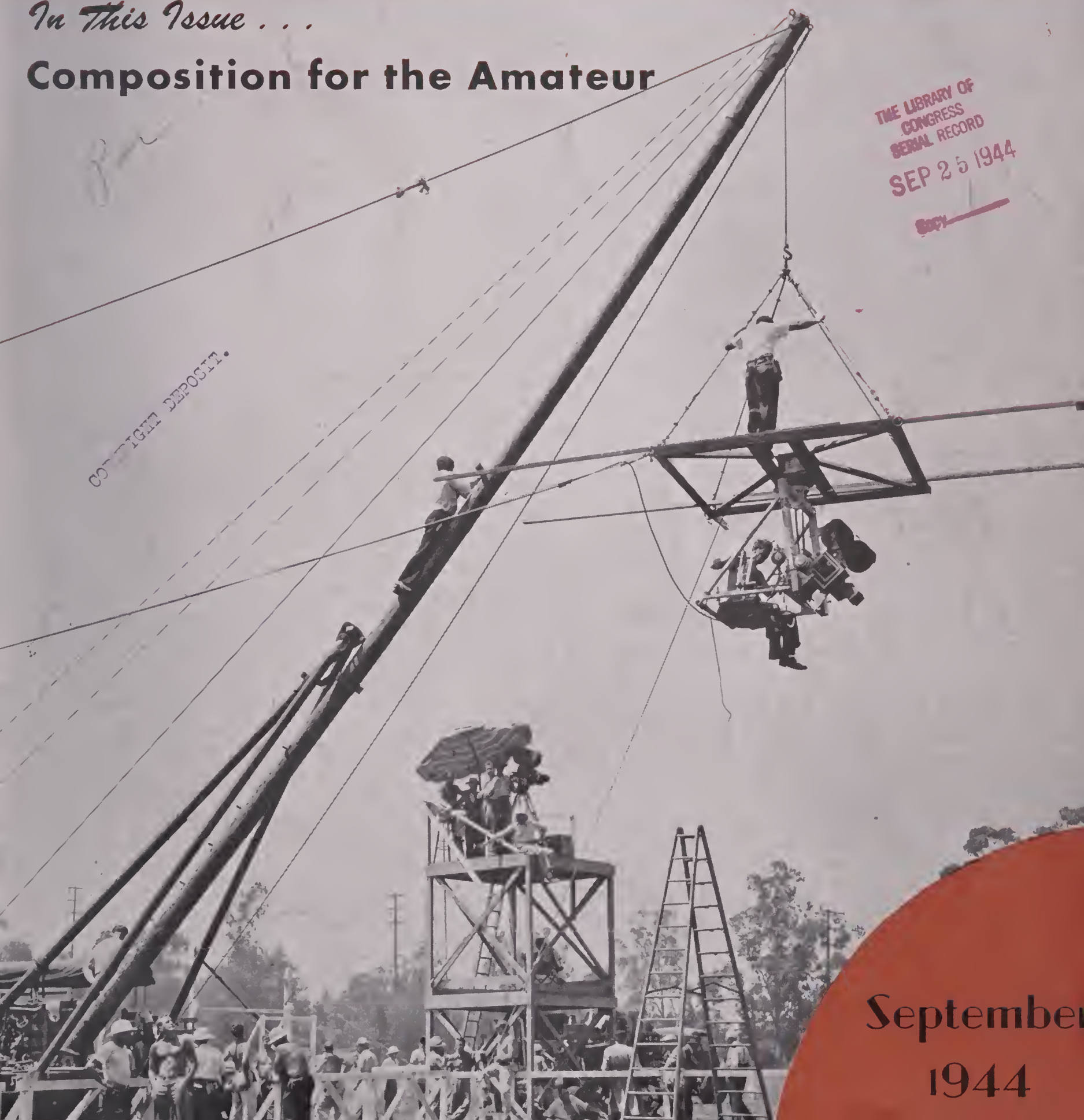
★ THE MOTION PICTURE CAMERA MAGAZINE ★

In This Issue . . .

Composition for the Amateur

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CONGRESS
SERIAL RECORD
SEP 25 1944

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September
1944



Scene at Tarawa taken on Du Pont Motion Picture Negative by Marine Warrant Officer Norman T. Hatch

Maybe you're in this picture, too!

You are in this picture, if it's your blood they're giving him on the beach at Tarawa.

The battle of Tarawa is one for the history books now—another lesson to the Nips that *nothing* can stop the United States Marines. Today many a soldier is back in the fighting ranks—instead of being stretched

out under a white cross. That's because somebody's blood was waiting to replace what was spilled on Tarawa's sands.

Before our men hang their overseas caps on Hirohito's hatrack, they'll have to do a lot more bloody fighting. So they are counting on you to stick with them. Remember every victory takes

blood—more blood than they can spare. If you helped at Tarawa—keep helping all the way to Tokyo!

• • •

If your heart is in the war . . . you will want to put your blood in it too. Make an appointment today with your Red Cross Blood Donor Center. Your blood will help save a soldier's life.

DU PONT MOTION PICTURE FILM



Patterson Screen
Division



BETTER THINGS FOR BETTER LIVING . THROUGH CHEMISTRY



Film Products
Division

SURE IT'S TOUGH...BUT HE'S GOT AN

Eyemo



H. S. Wong and his weapon—
a Model M Eyemo

This is H. S. "Newsreel" Wong's beat . . . the Salween front in Burma. Rugged terrain, weather, Japs haven't yet kept this intrepid newshawk from doing a brilliant job of reporting the war in Burma.

No, they're not planning this war to be easy on the newsreel boys. Every shot they get means sweat and danger and work. None of them have time to nurse inadequate equipment along. When news breaks, a man's camera must be ready to shoot.

That's why so many of the dyed-in-the-wool news cameramen . . . men like H. S. Wong (inset) who have been filming news for years . . . use Eyemo Cameras.

They've learned the *hard* way . . . from daily experience . . . that Eyemo is rugged . . . that it's *always* ready . . . that it *gets* the picture clearly, accurately . . . with the least possible adjustment.

Seven standard models make Eyemo one of the most versatile of all 35mm. cameras . . . and a wide range of carefully correlated accessories makes it possible and practical to have the one Eyemo Camera best-fitted for your own movie problems.

A PROMISE TO EVERYONE WHO'S WAITING TO BUY POSTWAR FILM EQUIPMENT

The new cameras and projectors that Bell & Howell will produce after Victory will *not* be hurriedly assembled from left-over parts. They'll be improved by the discoveries we have made in producing secret devices for the armed forces. You'll buy them and *use* them with the same pleasure and confidence you've always had in Bell & Howell equipment.

HELP US PLAN THE FUTURE OF OPTI-ONICS

We want engineers experienced in electronic and mechanical design to help us explore the peacetime possibilities of OPTI-ONICS. It's a big job—and we're looking for topflight men. If you're one, write us your story, and send a photo. Address: Chairman, Opti-onics Development, 7100 McCormick Road, Chicago 45, Illinois.



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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

SEPTEMBER, 1944

NO. 9

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THE FRONT COVER shows Director of Photography Len Smith, President of the American Society of Cinematographers, photographing a race track scene in the Metro-Goldwyn-Mayer film, "National Velvet".



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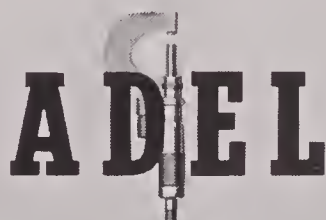
**Mother, is your
job at ADEL
important?**



Make that bond
between Soldier-Civilian
A WAR BOND

Yes, dear — any job that in the least way assists our fighting men is important. Mother's working harder than she ever has before, puts more and more salary into war bonds because she knows how much there is at stake. She's proud to help make ADEL aircraft products that are famed among United Nations' pilots for *Design Simplicity* and *DEPENDABILITY*. ☆ ADEL orig-

inally planned to make cinematographic equipment. However, a unique lens focusing device became a carburetor dual control which, in turn, led to development of other aircraft products. ADEL'S peacetime plans include advanced cinematographic equipment, made with the engineering skills that created ADEL'S international aviation acceptance.



ADEL PRECISION PRODUCTS CORP., BURBANK, CALIFORNIA, HUNTINGTON 17, WEST VA.
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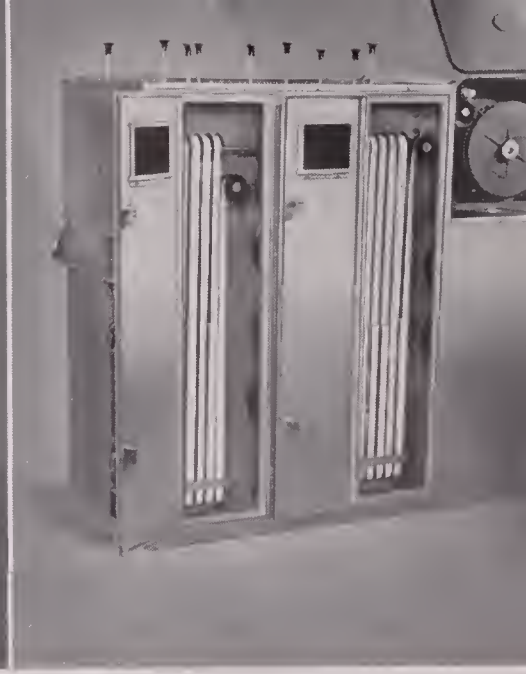
PRIMA BALLERINA—The above photograph depicts Beth Dean, dancing star of "The Waltz King" in a striking pose. She appeared in Universal's "Cobra Woman", and amazed Hollywood by turning down three offers to appear in films. Her reason was that she prefers dancing on the stage. However, she says she may return to Hollywood and films after her tour of America with "The Waltz King".



Processor closed as for operation.



Processor showing dry-box side as for operation.



Processor with dry-box doors open.

A New Portable Processing Printing and Editing Kit

OF INTEREST in the cinematographic laboratory field is the announcement by the Houston Corporation, 11801 West Olympic Boulevard, Los Angeles, California of its new Model 9 Processing, Printing and Editing Kit for 16mm motion picture film, which is designed for portability and limited space.

The developer may be used for both negative and positive film. Its capacity is from 120-360 feet per hour. All solution tanks have a capacity of two and a half gallons. There is also a quick drying machine, the drying accomplished in two compartments, in the first of which the film is passed by three infra red lamps and in the second by two more. The operation of the developer may be either in daylight or darkroom. The exposed film is mounted upon daylight loading flanges for transfer from the darkroom to the magazines of the developer where it is completely processed. It is ready for printing in 35 minutes, including drying. The processor measures only 18 inches by 37 inches by 36½ inches.

The developer and the darkroom are two separate units that may be transported individually and set up close together, or at any convenient location. Both are made of stainless steel, except for the magazines, flanges, water pipes and motors.

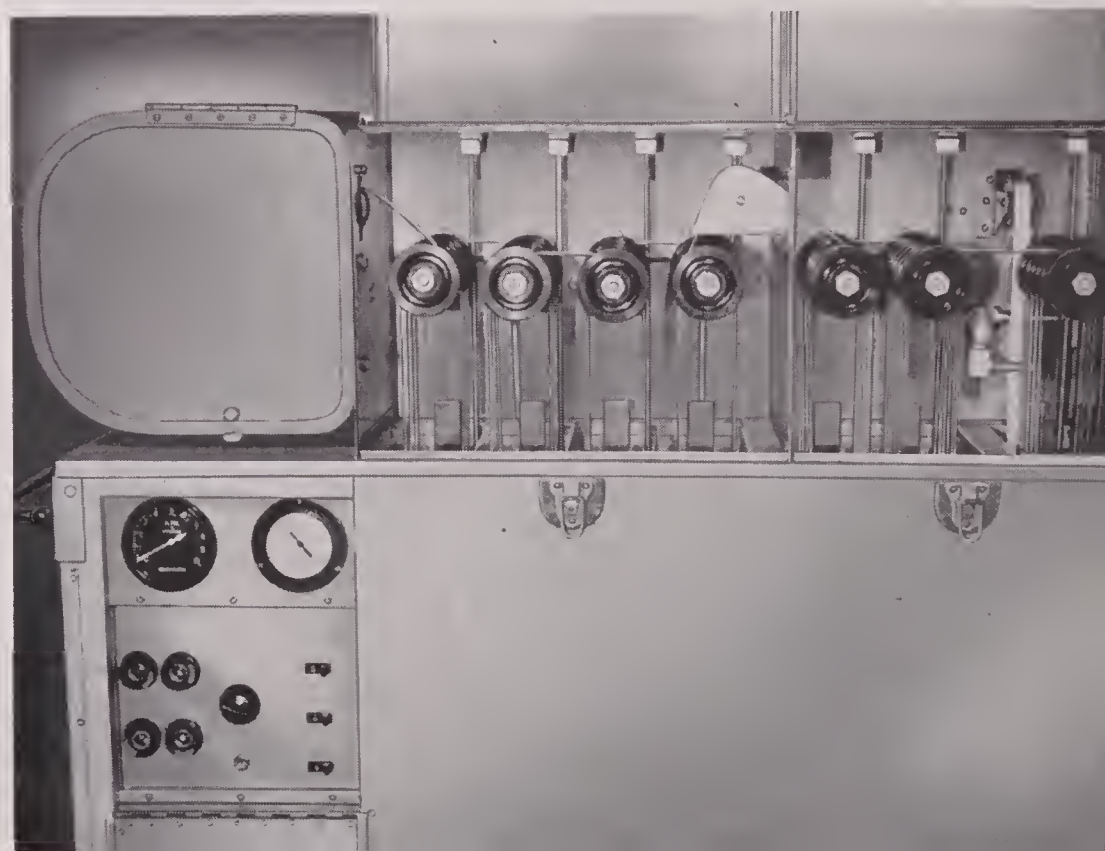
The accompanying darkroom measures 17 inches by 38 inches by 54 inches, and all auxiliary equipment necessary for the completion of an entire motion picture is contained in this cabinet:

Rewinds are provided for loading the film onto the developer flanges. A 16mm continuous printer is bolted to the frame in the upper chamber of the darkroom. This printer operates at 20 feet per minute, and selective light changing compensation for carrying negative densities is provided. Negatives up to 400 feet in length may be printed on this 17-pound unit. A viewer is provided to facilitate editing. Rewinds are furnished and mounted to the viewer base. A convenient splicer is also part of the viewer equipment. Mounted on top of the viewer is a small light box, in which a varying

density negative has been mounted. The varying densities on this negative are calibrated to match the printer density control. This density control may be set for the varying density of the negative as it passes through the printer, and which has been pre-determined by comparison with the varying density negative in the viewer. This simple compensator provides a quick and easy means of grading or approximating the light density for the varying printing requirements found in an average roll of film.

The viewer is of the rotating prism type, and enlarges the 16mm image to 2¼". Either continuous or still projection is possible by means of this viewer. In the ample space provided in the lower compartment of the developer may be packed the items necessary for the operation of the developer, including a dual purpose motor mounted on a rigid stain-

(Continued on Page 319)



Processor with solution tank covers open.
(Note tachometer.)



Through An Eyemo Finder I Saw Champions Fall

By IRVING BROWNING

GOING through a stack of seat tickets I had saved from my attendance at many championship prize fights, brought back to mind many fond memories of the days, more than twenty-five years ago, when I became cameraman, to my friend Leon Britton, in his venture into the production of the championship fights.

Britton asked me to meet him in the office of Tex Rickard at the old Madison Square Garden, on Fourth Avenue and 26th Street, in New York City, some time in the year 1920-21. I met him there at the appointed time and was introduced to Tex Rickard and several other gentlemen with whom we met for the express purpose of discussing the possibilities of arranging the photographing of motion pictures of the championship fights, indoors.

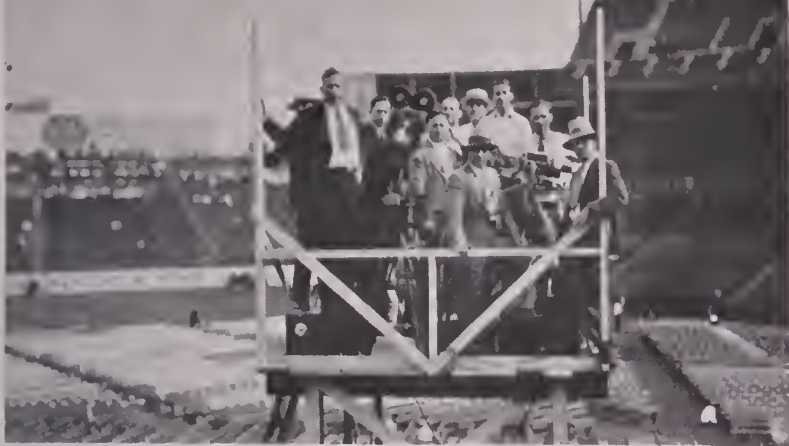
This was more of a problem than it would seem to be today. In those days of orthochromatic film emulsions, Cooper Hewitt lights, flaming arc spotlights and floodlights, the thought of all of these adverse elements to be used on fights caused some concern. We discussed the possibility of using the flaming arcs, suspended above the ring. We tried them out, but the arcs, with verticle burning carbons, sputtered flaming bits of carbon on the fighters and the ring. The fighters were afraid of getting burned and we had to dispense with the use of those lights. If glass covering was used underneath the arcs the bits of carbon would block out the light from reaching below and the brightest light would reflect to all sides, where we least cared

Before our attempt at indoor photographing of the championship fights, they were either re-enacted on the roof of the Garden, being photographed by one cameraman, or in daylight arenas and photographed by two to three cameramen. This was the most plausible lighting for film, but too hot for the audience to sit through. We finally got around to night fights, by the use of about forty 1000-watt incandescent bulbs strung up over the ring, giving us enough light to get a substantial amount of exposure at from F4.5 to F3.5 with orthochromatic negative. That was an early attempt at photographing under the incandescent light, much before its use in the studios, with the adaptation of panchromatic emulsions.

The photography of fights was difficult because of the angle of light reflecting from the mat, together with orthochromatic film and incandescent bulbs, a poor combination with which to try to get the best results. Everything was against us, we never had an opportunity to make tests in advance, many times, there were less lamps or more lamps as we would go from one place to another to cover the fights.

Years later, Jack Rieger, an editor-cameraman and producer, came into the fight films. Jack made arrangement for better fight pictures, by arranging for better lighting equipment. Tests were made in the afternoon of the fight on indoor filming. We were most always the same camera crew on each fight, the only changes made were when one of our regulars was on another assignment. The





camera crew generally consisted of Jack Rieger, taking the camera covering the entire ring; Frank Zucker on slow motion; Al Wetzel on regular motion camera; Roy Phelps on slow motion; I, on regular motion camera; Joe Seiden on regular motion camera, and the general crew which consisted of Eddie Ruby, Walter Strange, Harold McCracken, Lester Lang, Bert Cann, Leo Lipp, Burgi Contner, Jay Rescher and so on, the cycle in the silent days up and onto the advent of sound.

Later, fight films gained in popularity and the camera crew was increased. From the original one, two or three cameramen, the crew was increased to as many as seven cameramen with seven assistants, sound man, and assistant, electrician and assistant, two property men, two grips, one carpenter, four messengers, used as "runners" to the laboratory with several rounds of film each. This made a total of over twenty men on the stand. Rieger was responsible for this growth of fight film production.

We were all herded on the platform, all twenty of us. The platform was built, so I was told, eighteen feet off the ground, sixty-five feet from the ring. This height and distance became more or less standard, wherever we went to photograph fights.

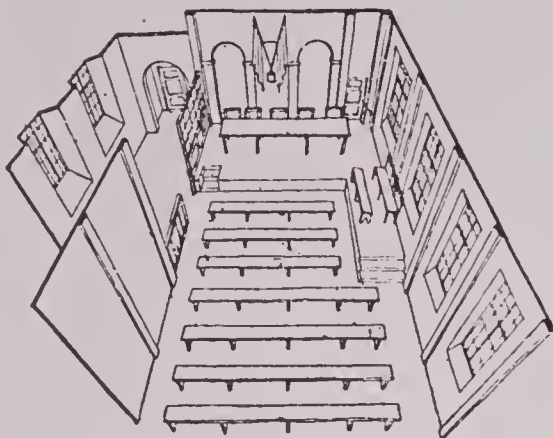
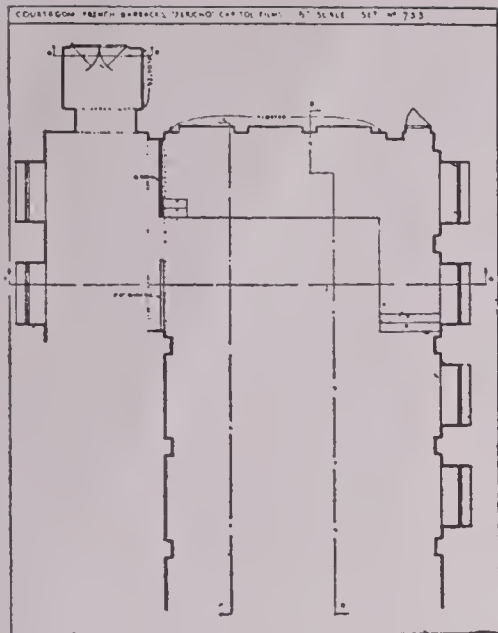
With sound, the picture changed slightly, particularly the equipment. With panchromatic emulsions and the new incandescent lighting equipment, lighting a ring was a pleasure. We used twenty-four 2000-watt lamps nicely distributed, covering spots of the ring in pairs. There were two single system Mitchell sound cameras on the job; one camera taking round one, the other camera taking round two and visa versa. There were two slow motion cameras using one thousand feet to the round, also, they alternated taking the rounds. There was always one camera taking the entire ring and when the fighters went to the center of the ring, we would pick up from there with a six-inch lens and at the end of each round, the camera covering full ring picks up again, taking the fighters back to their corners. There was one camera standing ready, in the event of a buckle or mishap. I was at ringside.

It is said that in July 1894, the first prize fight film to be photographed was done at Edison's "Black Maria" Studio in West Orange, New Jersey; the fighters were Michael Leonard, known as "Beau Brummel" and Jack Cushing. Six of the ten rounds were photographed, and a record of one thousand feet of film was used by the then, Kinetoscope Company.

(Continued on Page 302)

Opposite page: top three pictures at left shows Max Schmeling knocking out Joe Louis in 1936. Lower four frames shows Louis knocking out Schmeling in 1938. The other photo shows the author at ringside with his assistant George Stoetsel. Top, left, of this page shows old wooden stand for cameramen at fights. Top right, some of the early birds who photographed fights. They include Browning, Frank Zukor, Ben Witzler, Joe Seiden, Walter Halcolmb, Al Wetzel, Jack Reiger, Sam Rosen, Walter Strange, Sam Marino, Roy Phelps. Right, center, the new steel camera stand for the cameramen at the fights. Right, bottom, Browning and his crew for the Dempsey-Tunney flight in Philadelphia in 1926.





Art and Technique In Set Designing

By EDWARD CARRICK, N. R. D.

THERE are, at the moment, three main schools of Art Direction or set designing.

First the American, or Spectacular, school derived from Italy at the beginning of the last war, in which everything is sacrificed to splendor and showmanship, and even simple cottage interiors are decorated or dramatized so as to make the people who sit and watch in the picture "palaces" forget the realities of life.

Secondly, the German, or Imaginative, school, the result of the last war, which shows the artist's psychological approach to the drama and is ever reminding the audience of the tragedy of life.

The third school, which is fairly young and started in England, is the Realistic school. It has been stimulated by the growth of Documentary films during this war.

The art directors of the Imaginative School were mostly painters before they came into films; the Realistic School were mostly architects. The Realist School bother very much about the shape of the room; the Imaginative School bother more about what is in the room, above all how it is lighted. The Spectacu-

lar only worry about the size of the room and the novelty of its contents.

Whatever school of art direction one adheres to, one's work can only be judged by the results, and these depend on the technical skill and the knowledge of ways and means in the departments working with one.

First Designs

The designer reads the script and after consultation with the director and writer, sets about making his first sketches. Those of the Imaginative School at this point always being the photographer or cameraman because they know that however much care is spent in placing lights and shades in the sketch, none of them will ever appear without the co-operation of the cameraman.

After the first rough sketches, finished drawings are made, and though some of these, particularly when done by Andriew and Bellan, are very beautiful, they do not help very much in the making of a film. In fact, I think the "long shot" view of the set is gradually dying, and a very good thing too. A pictorial view of one angle or a set round which the camera is to move is not much help and is, in fact, only used by directors and stars as a show piece to talk about, and does not serve any useful purpose in the making of the film.

The most useful way of giving an idea of what the set is going to look like is by making a model half-inch to the foot or larger. Then the whole action can be studied in and around it. Films are, after all, moving pictures.

I also favor a bird's-eye view, or anyhow a high view, to give a good impression of a set. It may not be an angle that is going to be used in the film, but it gives all concerned a much better idea of the geography of the set, and is the only way in which four walls can be shown at once. I also prefer to make them small enough for the director and cameraman to put copies in their scripts.

Ceilings in Sets

Ceilings, more than any other structural feature, help to give reality to the set.

I used them in 1927. There was a corridor set in "The Maid Johanna," 20 feet long and about 8 feet wide, completely covered by a ceiling, and superbly lighted by Krampf. The ceilings in "Stage Coach" are all memorable, yet publicity men would make us believe that they were first thought of and used by Orson Welles.

Cameramen do not like ceilings because they are difficult to light with. But sound technicians are the people mostly responsible for their being left out, particularly if they are lower than the height of the boom. Surely the tools should obey the artist—in the twentieth century we should have learned to master the machine.

Importance of Position

One of the most difficult things about set designing is so to arrange doors, windows, etc., that they feature at the right moment and in the correct relation to the actor and his action. It is comparatively easy to design for the theatre where the whole set always appears behind all the action.

Another headache for the art department is the arrangement of a number of sets on one floor, so that they allow enough room for lighting and the key long-shots without wasting wall space. This calls for a good understanding of lenses, and knowing which your particular camera will use.

Before a set gets on the studio floor, it has to be built, textured and painted. This work is carried out by skilled carpenters, plasterers, and painters who work from half-inch plans and sections and full size details, all prepared by the art director and his department.

Since the war we have tried to cut down on paper, so fewer full-size details are made, and general plans and sections have been reduced when possible to one-fourth-inch scale.

Texture in Plaster-work

Modern films have, thank goodness, discovered that film stories are dependent more on close-ups and mid-shots than on the old-fashioned long-shot. So here again greater care is required in the detail, particularly with textures. In "The Hunchback of Notre Dame" some nice close-ups were badly spoilt by some of the worst plaster olde-worlde beams that I have ever seen.

Even in color films, texture matters most, so I feel that such things as plaster cobbles, stone work, brickwork, etc., should be made with greater care so that the "mould made" effect can be avoided. Nature is far from being "mould made."

NOTE: The above paper was read by Mr. Carrick before a meeting of the British Kinematograph Society. We reproduce it here because of its technical interest and because of Mr. Carrick's remarks about the lack of use of special effects in England. In the Hollywood studios Cinematographers specializing in this art are one of the most important factors in the making of motion pictures.—The Editor.

Set Dressing

After the set is built it has to be dressed and lighted. Set dressing is the most important part of art direction. It is through the things that are put in a room that audiences are helped to understand the character who lives there. The set dressing is done with the assistance of the property department. In America many more highly skilled and intelligent men get into this department than over here, where the "good old stagers" are gradually dying out and not being replaced.

It is well to remember that if the cameraman is expected to light a set as designed, room should be allowed for the requisite lamps to get the effect desired. To this end, English designers could do well to study some of the many valuable books on lighting, such as those written by Professor Luckiesh in America.

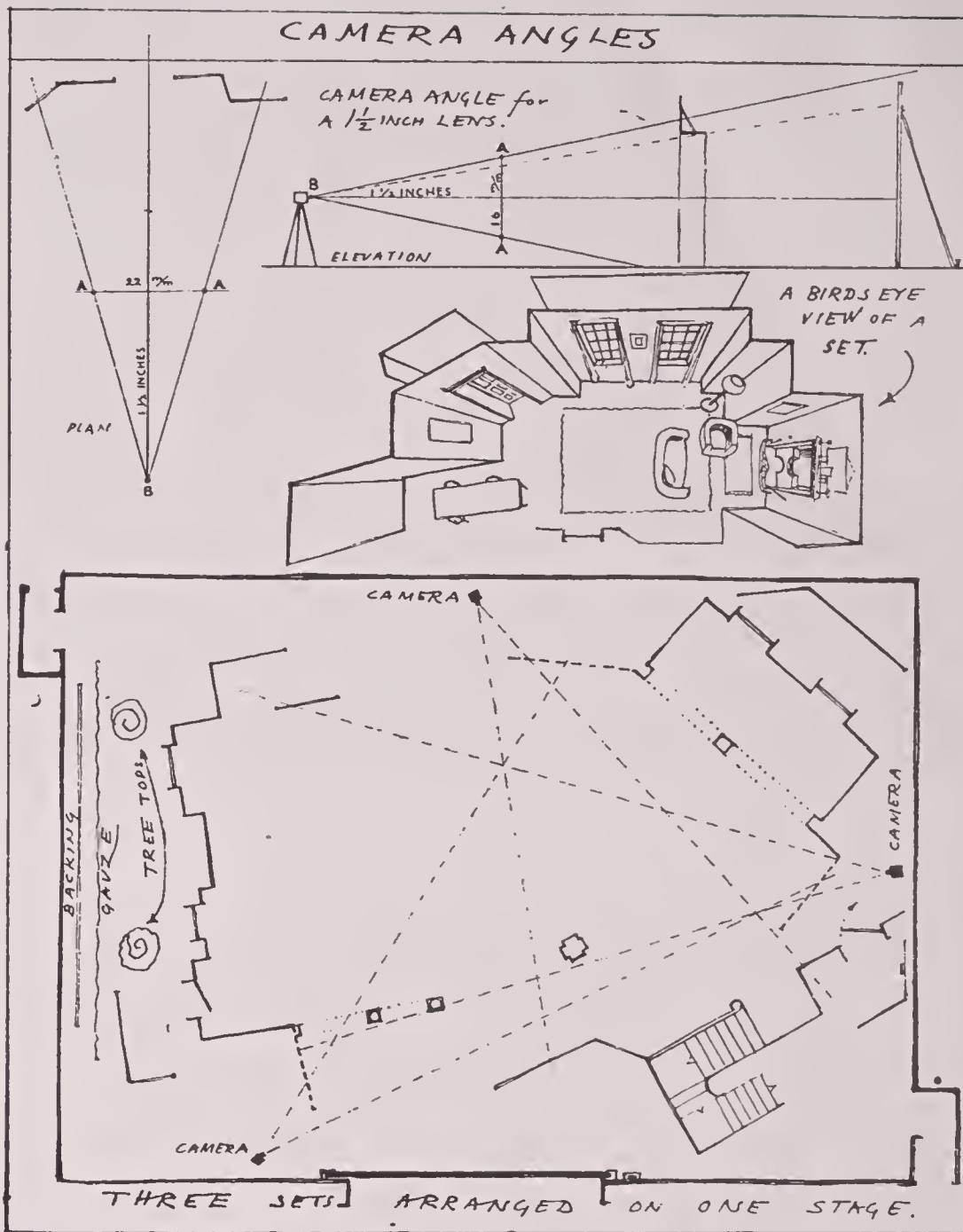
Günther Krampf, a photographer who is aware of the ridiculous effect of objects having two or three shadows, used to get over the difficulty in the old days by lighting his set with one arc, having the shadows carefully blown in, and then the subsidiary lighting never killed them.

Special Effects

And now to mention that part of art direction which is nearly always avoided in studios—tricks. Art is artifice—tricks—and it is the knowledge of the tricks of the trade that is so useful to the artist.

In the early days of films, when big expenses in set construction were first encountered and costly were required at small outlay, these difficulties were got over by the artist-technician using his brains and ingenuity with the result that so many devices and patents have been invented for use in film making that nothing is now beyond our scope if only we were to use them and use them properly. Except for the few specialists, the general knowledge of effect and trick work among directors, art directors and cameramen is very low indeed, so low in fact, that they avoid using them at all

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On opposite page is a plan and a bird's-eye view of the same set. The plan is for the carpenter's shop and the bird's-eye view is for the Director.

Top of this page is diagram showing camera angles and arrangement of sets.

Bottom, left, is an original drawing for "The

Dictator". An excellent example of the Imaginative school.

Bottom, right: A shot from "Unter heissen Himmel", showing the perfect one-source lighting of a storm scene in a studio. Here the collaboration between art director and cameraman is evident.





A shot such as this could not have been made without a tripod.

Hand-Shot "Stuff"

By ALVIN WYCKOFF, D. Sc., A. S. C.

YESTERDAY, listening to a group of camera enthusiasts who had gathered in one of the popular Camera Shops to compare notes and examine each other's prints, I overheard one of the enthusiasts remark that he wondered WHY his negatives always produced a slightly blurred, soft-focus effect, as he called it, in his "blow-ups."

The manager who called into the discussion. He was very blunt in his reply, and rightly so. Said he: "Why in — don't some of you artistic guys learn to use a tripod, or at least something for your camera to rest on, instead of trying to act professional by hand-shooting your stuff. You seem to think that all you need for picture taking is a camera, a roll of film, and one of those fancy zipper-closing bags slung over your shoulder full of gadgets you don't use."

Instead of answering, each one of the group looked from one to another with a sickly smile of wonderment.

The manager didn't wait for an answer, he continued with what he had to say. "I'm getting mighty sick and tired and disgusted trying to print a lot of the stuff my customers bring in here. It's not only the disgusting waste of material that gets me down but the waste of time in getting the stuff out, and then collecting the customer's money for his own foolish mistakes, and then pointing the disbelieving fact out to him."

One of the group with courage spoke up: "Look at these pictures I made, they're sharp, perfectly sharp."

The manager asked: "What speed and at what f-stop did you shoot 'em?"

"One twenty-fifth of a second at f-2.9."

"You used a tripod, didn't you?" asked the manager.

"Certainly."

Another of the group asked: "What do they say is the slowest exposure-speed that is safe to use without a tripod?"

"Well, if you ask me," replied the manager, "I'd say not under 1/50th of a second, and not even then unless you have light enough to stop down to at least f4.5."

"Another voice from the group ventured to remark: "The instructions say that it's safe to shoot without a tripod at 1/25th of a second."

"The instructions are right," agreed the manager, and then he proceeded to point out a few facts.

"What the books tell you is some other fellow's point of view." He waited a moment to see if his remark registered. "Perhaps the guy who writes those words can do it, but no matter what the book says, or even all the books you read, you are supposed to do a little thinking for yourself."

"What you are supposed to do is to

analyze what he writes as instruction in the light of his viewpoint. Can the rules be applied to your conditions? The great trouble with most camera enthusiasts is that they take too much for granted. Few of them take their photographic hobby seriously. Instead of spending their money for film to bang away haphazardly, and then paying more money to have to process the stuff, they should analyze what they are going to do; study it out; try to make the result as perfect as their understanding will permit, and then to make each succeeding effort surpass those that have gone before.

"Photography is a serious business, even when you play with it for fun. Even when you're careful it's an expensive hobby. After you have the tools to play with, every move you make with them requires a certain expenditure of money, and money is hard to get these days even if it does come easy to a few people who never seemed to have enough in former days.

"A lot of professionals shoot from the hand—but, they never do so unless they have plenty of light for an exposure and enough of it to enable them to stop down the lens diaphragm for a good depth of focus.

"There are many books on the subject of Photography, and a few good schools that teach it.

"You can read through the pages of many volumes, classical and elementary, without reading as much as one full page of instruction, or suggestion of the vital importance of a tripod to a camera or its importance to much of the technical photography that could not be made without it, or some kind of a good base to work from.

"You will read about the manipulation of the approach to photography, all about lenses, makes of cameras, chemistry of photography, accessories, dark rooms, dark room procedure, dark room equipment, but very little about the use of a tripod.

"Very few persons can hand-hold a camera sufficiently steady to make a clean exposure at 1/25th of a second; and when I say clean, I mean a definitely sharp-focus negative that will stand enlarging and retain sharp definition viewed at arm's length. Even those enthusiasts who claim to have strong, steady, nerves are rarely successful at it. Their pictures nearly always have a tell-tale fuzziness about them. If a soft-focus effect is desired, then use a lens, or an auxiliary lens, that will render the effect desired, but—use a tripod, or some other substantial support, to insure the soft-focus effect to be clean rather than fuzzy, or softer, than soft-focus.

"A new publication has just come on the market under the auspices of a very reliable publisher of photo-technical journals. This particular volume is pointed at

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ACES of the CAMERA

Russ Harlan, A.S.C.

By

W. G. C. BOSCO



AN important factor contributing to the universal appreciation that exists for better Western pictures is the magnificence of Western scenery. As a backdrop against which has been told innumerable stories of a colorful and exciting period in American history, places like Zion, the Sierras, and the Painted Desert have become recognizable national beauty spots to people everywhere; and their screening has done a great deal towards fostering the appreciation for the West that currently exists. For this, full credit must go to those cameramen who have acquired that special skill that captures the moods, as well as the majestic and splendid vistas of the always exciting West.

Director of cinematography, Russell Harlan, A.S.C., is one of those men. Russ knows the West about as well as the average man knows his back garden. There is hardly a ghost town, a mountain, canyon, or section of desert that he hasn't visited, and on which he hasn't trained his lense.

When the redoubtable Harry Sherman decided to form his own production company ten years ago, he made a very wise choice when he made Russ Harlan head man on the camera.

One of the few Native Sons of California to have reached the top in his profession, Russ is an expert trout fisherman and horseman, and a collector of guns. He captures a quality of authenticity in his pictures because he is a part of the West which he helps to recreate for the screen. His feeling for the subject and his close association with it has made him an authority on the early

West and its ways. He knows how all the great gun-fighters of the frontier days carried their shootin' irons, how they fought, and how they died. He knows as much about cattle and horses as a top ranch hand is supposed to know, and he possesses all those personal attributes that are generally credited to the heroes of Western stories.

Russ started in the film business as a lab assistant for Paramount when that company bore the name of Famous Players Lasky, and made its home on Vine Street. After a period of apprenticeship he became an assistant cameraman, and he remembers how earnestly he tried to make good on that first assignment.

Alan Dwan was the director of the picture which was called "Coast of Folly"; starring the versatile Gloria Swanson, whose versatility was to be shown off in the picture by having her impersonate Mary Pickford and other contemporary feminine stars. Russ was sitting impatiently on the camerabox, while the patient Dwan was coaxing the

mood he wanted out of Gloria with soft spoken suggestions and the strains of a string orchestra playing on the set. It was a close shot of Gloria lying enticingly on a chaise longue, wearing a blonde wig. Without raising his voice from the low monotone with which he had been working on la Swanson, Director Dwan told Russ to go in and slate the scene for a take. Russ slid in front of the camera, thrust the slate for the required moment in front of the lense, and leaped back to his place; all with a conscious effort of obedience to retain the spell cast by the director. But much to his, and everyone else's amazement, a piercing scream accompanied his deft maneuver. He had Swanson's wig hooked to his slate.

Another turn of events that almost brought his camera career to an abrupt end was of a little different nature. He was an assistant at the time, working on the first production of "Nevada." When the director of the picture saw him he told Russ that he wanted him

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Through an Eyemo Finder I Saw

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It is also said that Biograph introduced "photography under lights" of the Jeffries-Sharkey fight in 1899. They must have photographed this fight, using the Wellsback mantels. Personally, I wonder how they managed to get anything on their film, considering the slow film, slow lenses and their source of light, but I suppose that even if they got an impression on the film, that was photography. I have never seen any of this film in my research.

My purpose for this story, is to prove a point. I am the aggressive type of person; I will not, and cannot, be pinned down to a style. My motto is, look for improvement. I will always work to that end, and eventually work out a problem my own way, making something different and unusual of a prosaic subject.

I never did like the crowding of the men, cameras and assistants on the stand. It was really a cramped grouping and no one was particularly happy about it. It gave us little space to move in and we were expected to bring out miracles. The fire department only allowed a 6 x 8 foot platform, only eighteen feet from the ground. About five large cameras, five to six cameramen and five to six assistants were on the platform. Assistants had to reload film magazines and that was terrific crowding, with nerve tension running high. When a camera buckled, there was a scramble to get another camera in action so that nothing would be missed.

Usually, there was one cameraman assigned to covering both camps of the fighters. This was necessary for now and then, a fight might go only one to four rounds. Joe Louis knocked out Brescia in four rounds and the film was scrapped—undeveloped. Because of short fights at times it became necessary to show both men in training, all leading up to their entry into the ring and the bout.

I had asked Leon Britton time and again to get permission for me to photograph down at ringside with an Eyemo 100 foot camera, assuring him that I would get some fill-in shots of ringside action such as they had not previously had. I wanted to get the radio broadcasting, the sports writers at their typewriters, the Western Union men sending the sports writer's material direct to his paper. Also, I could get celebrities at ringside. These shots could fill in between rounds and lengthen the fight film wherever necessary. I had a merry time convincing Britton to let me do this as I wanted and make the change myself. I was persistent, I knew what I could get and I wanted to try it and if I could convince him, I would be at ringside from then on.

Came the day and Britton decided to allow me to prove my idea worthwhile. He gave me 400 feet of negative. I covered the ringside activities at the Sharkey-Schmeling bout at the Madison Square Garden Bowl about 1930. I had full sway and I used that 400 feet to

tell a film news story of what takes place in the ringside seats, and I believe I told it well. This was my first time off the platform, and this time the platform was built 10 x 12 feet with a complete latrine and a covered roof.

I covered everything in those 400 feet. I had celebrities, prominent fighters, radio announcers, busy sports writers, seconds, etc. I made a busy series of events of that 400 feet and included several angles of seconds in corners and their anxiety as they watched over their boys. Now and then, using the seconds as foils for foreground composition, I picked off the boxers when I could get them, passing my particular set up. I was not assigned to any seat. I had carte blanche and roamed everywhere, camera in hand.

Well, they saw the film, and I was complimented on what I had made of it. It was exciting, but they could not use it. The fight went too many rounds and there was no room to cut my stuff in. It did cause some excitement anyhow. They could not get over several close-ups I made of the fighters from below the ring. Those shots were something to see but because I had not particularly concentrated on that, the scenes were not long enough to cut in. Rieger called a meeting and we discussed the further use of the Eyemo, concentrating on making nothing but close-ups of the fighters and devoting about 50 feet per round from a ringside seat. From then on, I did just that, and turned in some exciting films. Later on, I was awarded the privilege of an additional Eyemo camera, an assistant to reload for me and the privilege of using as much film as I found necessary. This worked out well, except here again, I was hemmed in between busy men either at typewriters or tickers. Since their job was as important as mine, I just had to make the best of it and say nothing. It was impossible to ask for any more room. There was none to be had. We sat in small folding chairs crowded together and all of us broader than the seat. I didn't like crowding!

In the early days, we were admitted into the arena without tickets. Later on, we entered with tickets only and I saved the stubs of the ones I received. I have covered all of the Joe Louis fights from his beginning. I saw Schmeling knock him out in 1936, and I saw Louis take back his championship in one round in 1938. I photographed Louis putting aside all of the world's former champions in a short space of time.

I photographed all of the Max Baer bouts until Joe Louis removed the championship from him. I photographed many of the Jack Dempsey bouts and the famous long count and his losing the championship to Tunney in Philadelphia. I photographed Tunney's bouts until his retirement from the ring. I photographed the following bouts:

Dempsey-Tunney, September 23, 1926.
Bettina-Conn, July 13, 1939.
Braddock-Louis, June 22, 1937.
Louis-Farr, August 26, 1937.
Galento-Louis, June 28, 1939.
Louis-Levinsky, August 7, 1935.

Comiskey-Baer, September 26, 1940.
Louis-Schmeling, June 18, 1936.
Armstrong-Ambers, August 22, 1939.
Siki-Norfolk, November 20, 1923.
Louis-Pastor, September 20, 1939.
Louis-Paychek, March 29, 1940.
Baer-Doyle, August 22, 1935.
Ross-Canzoneri, September 22, 1933.
Sharkey-Carnera, June 29, 1933.
Schmeling-Walker, September 19, 1932.
Galento-Baer, July 2, 1940.
Dempsey-Firpo, September 14, 1923.
Godoy-Louis, June 20, 1940.
Louis-Schmeling, June 22, 1938.
Louis-Baer, September 24, 1935.
Louis-Sharkey, August 18, 1936.
Louis-Ettore, September 22, 1936.
Sharkey-Dempsey.
Retzlaff-Louis.
Louis-Conn.
Jenkins-Armstrong.
Louis-Carnera.
Ross-McLarnin.
Criqui-Kilbane.
Berlinbach-Delaney.
Baer-Nova.
Dempsey-Carpentier.
Leonard-Tandler.
Tunney-Heeney.

Also, Bettina, Garcia, Brescia, Ettore, Braddock, Jenkins, Mann, Buddy Baer.

I cannot recollect others, unless I went through a list of bouts that took place within the last twenty-five years, or thereabouts.

I do not remember ever getting any of my fight films out of focus. I always managed to keep all of the scenes in focus, having trained myself to follow focus in spite of it being tricky business to do this with a hand camera. I always got clear, sharp negatives as the fighters moved anywhere from 5 to 15 feet from my camera.

At the Louis-Schmeling bout, the Mitchell camera covering the regular speed, buckled in the first round; there being a loss of thirty seconds before the second camera was trained on the fighters. The fatal knockout happened in this first round, but I saved the day. I had covered that knockout even though I was told not to make any film unless the fighters were very close to my camera. At the time of the knockout, the fighters were about eighteen feet from my camera, but I saw it coming and shot that knockout in spite of the fact that my camera had only made fifty feet at a winding. Cameras seldom buckled, but under stress such as this, it just happened. Seldom did I say?

I take this opportunity to apologize to Walter Winchell, because in my suggesting the use of the Eyemo camera, I was seated in Row A center, the seat usually assigned to him. To make room for me, Winchell was shifted to Row B, center, behind me.

There was not enough room at ringside for the use of a tripod and the authorities would not assign more than two seats to the motion picture unit, one for the assistant and one for myself. On a few occasions there was another man

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IF IT'S BEING DISCUSSED
AS A PROBABLE
WINNER
of
THE ACADEMY AWARD
For Best Photography —

YOU MAY BE SURE
THE NEGATIVE IS
EASTMAN—

J. E. BRULATOUR, Inc.
Distributors



Mirror Pictures Reflect Your Photographic Cleverness

By JAMES R. OSWALD

THERE'S something about a mirror picture that appeals to most everyone. It makes little difference whether the mirror is a large console or wall type, or simply a hand or vanity mirror, if used to best advantage, the results can be equally charming.

But strangely enough, many amateurs are inclined to shy away from these mirror shots because they are harboring the false impression that this kind of photography requires some special skill, reserved only for the professional worker. The truth of the matter is, any serious-minded amateur can take good mirror pictures with no more difficulty encountered than in a regular snapshot. Added care must be taken, however, to see that all stray reflections are avoided, and that proper focus is attained.

Obviously, a mirror picture should include more than the reflecting surface itself, else the result might well turn out to be a self-portrait. The main advantage of a mirror shot is that it affords an excellent opportunity to show more than one view of the subject in the same scene. It is customary to place

the model between the camera and the mirror in such a way that the image of the camera is not visible in the mirror, to spoil the illusion. With the back of the subject's head facing the camera, the face is clearly reflected in the mirror.

In order to add variety to your mirror pictures, don't limit yourself to mirrors which hang on the wall. Many interesting and unusual effects are possible by deviating from this fixed, vertical position, and tilting the mirror at various angles until the most pleasing composition is obtained.

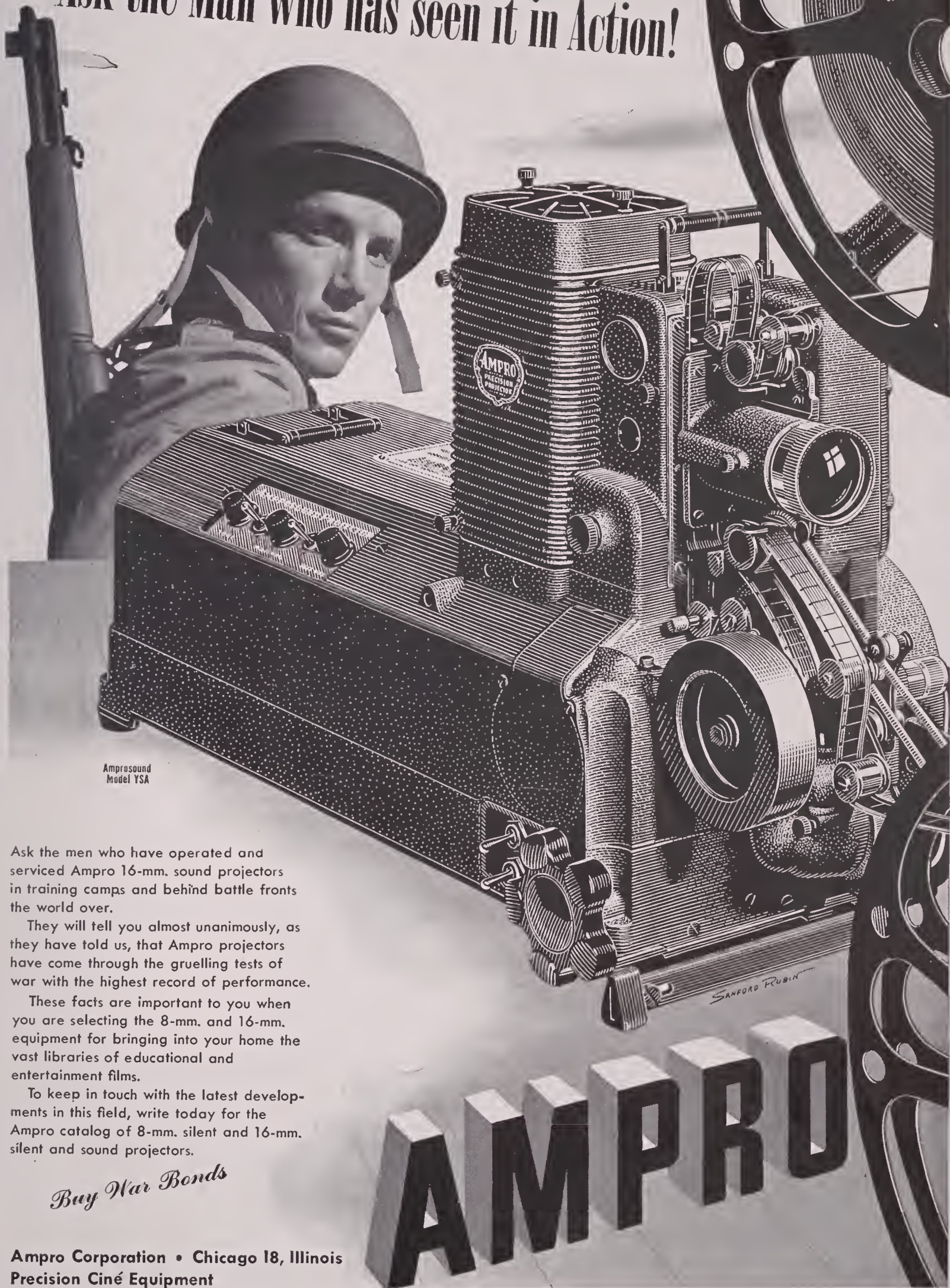
When focusing for mirror pictures, there is one factor in particular that must be taken into consideration, if the reflected image is to appear critically sharp. It must be presumed that this reflected image is as far *behind* the mirror as the subject itself is in front of it. Thus, when setting your camera focusing scale, the figure to go by is the combined distance of camera to mirror and mirror to subject. For example, if the camera is eight feet from the mirror and the subject four feet, the scale should be set at twelve feet. If your camera has ground glass focusing it is easy to determine when the image is critically sharp, without the aid of the focusing scale.

Setting the camera for a sharp reflected image, as outlined above, will not necessarily assure sharpness throughout the entire picture. If you desire

Top, left, is a pleasing example of mirror shot. Top, right, is a shot spoiled by the ugly shadow above and to the right of the mirror. Second, left, is a pleasing composition. Third, left, is an example of too much light. Bottom, left, a pleasing shot of the image in the mirror, but how much better it would have been had the lady's dress been more in contrast with the light wallpaper background.

(Continued on Page 321)

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Lighting Republican And Democratic Conventions

PERHAPS never before in history has the lighting of public events for newsreel camera crews provoked so much attention in the press of the nation as the lighting which was employed in Chicago recently to illuminate both the Republican and Democratic conventions.

The cause for the comment was manifold. The temperature in Chicago during the Republican convention rose to record peaks. Working members of the press had never seen such an impressive array of lights outside of the sound stages of Hollywood. Not being accustomed to the weather or the lights, the press in turn blamed each and both for the resulting high temperature within the convention hall, the Chicago Stadium.

Newspaper photographers concentrated their cameras on the lights, as a result hundreds of pictures were published in addition to thousands of lines of copy.

Despite the heat Robert J. Duggan, one of the outstanding motion picture lighting engineers of the middlewest, who owns the Studio Lighting Company of Chicago, feels that he achieved something in the lighting of public events for newsreel cameramen which will set a precedent for events similar in character for years to come. Duggan sets forth these unusual facts as the story behind the story that appeared in hundreds of newspapers throughout America:

"The outdoor temperature during the Republican Convention was particularly high and the indoor temperature, of course, much higher, but when 275,000 watts of incandescent illumination was added to the heat of the overcrowded convention floor, the result was something to be remembered. Add to this the regular house illumination of the Stadium, 115,000 watts—we now have 390,-

000 watts. The Chicago Tribune photographed a thermometer held at the speaker's rostrum and it registered 114 degrees. This temperature was a little higher than the surrounding territory because of the necessity of maintaining a high level of illumination on the speaker himself.

"The interior of the Chicago Stadium is a huge space fully as large as the biggest sound stages on the west coast, and the job of lighting it for the newsreels was simple in the respect that 'fancy lighting' was not necessary—in fact it was out. Due to the unprecedented demand for tickets, orders were given to eliminate the blocking of seats if possible. In consequence the lights were hung from platforms over the edge of the balconies and extended downward. The length of these platforms, which included those used for the newsreel cameras, reached a total of about 400 feet. This produced a very splendid effect of flat lighting, but no one would dare get fancy with a newsreel man, because the minute he would see a shadow he would think it was improperly lighted.

"The 275,000 watts of incandescent lighting, as mentioned before, was sup-

plied as follows: Twenty 10,000 watt Sunspots in 24 and 36 inch fixtures, also fifteen 5,000 watt Solar Spots. This gave a level of illumination all over the convention floor that enabled the movie outfits to use Plus X film at an F 3.5 stop. Due to the slow speed of the telephoto lenses, especially the ones of extreme focus, viz: 18 to 24 inches, it was necessary to raise the light level on the rostrum and the immediate territory to permit an exposure to be made at F 5.6, the wide open aperture of these lenses."

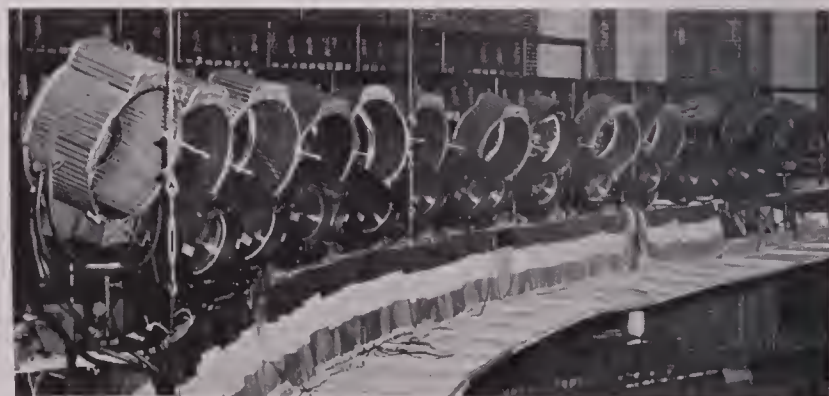
Duggan, who has been a cameraman for 30 years and has specialized in motion picture lighting for 25 years, further pointed out:

"This last mentioned item would be no problem at all and could be accomplished by merely 'tightening down' a couple of 10 kw. lamps, even though the throw was several hundred feet. In fact, even the whole Speaker's platform could have been lighted without much effort, to a level indicating F 5.6, but when it comes to blasting light all over the entire area, including the balconies, it was necessary to really pour it on.

"We counted close to 100 in the newsreel crews, cameramen, sound men, contact men, loaders, etc. These boys were stationed on the main newsreel platform which was on the first floor, a hanging newsreel platform from the first balcony and two or three smaller platforms in various parts of the stadium.

(Continued on Page 322)

Top left, Bob Duggan, head of the Studio Lighting Company, pointing to the speaker's stand at convention. Top right, is one of the sessions of the Democratic convention. Bottom right, is a shot of some of the lights that did the job.



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*Patent No. 2318910

The friction type head gives super-smooth 360° pan and 80° tilt action. It is removable, can be easily mounted on our "Hi-Hat" low-base adaptor. The large pin and trunnion assures long, dependable service. A "T" level is attached. The top-plate can be set for 16mm. E. K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

The tripod base is sturdy. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. Complete tripod weighs 14 lbs. Low height, at normal leg spread, 42". Extended height 72". All workmanship and materials are the finest. Also available are heavy fibre carrying cases.



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★ We show above a closeup of the Shiftover Alignment Gauge and also a view of the B & H Eyemo camera mounted on the "Professional Junior" Tripod and Shiftover. These have been especially adapted for aerial use by the Office of Strategic Services, Field Photographic Branch, Wash., D. C.

★ This Shiftover device is the finest, lightest and most efficient available for the Eyemo Spider Turret prismatic focusing type camera.

★ The male of the Shiftover attaches to the camera base permanently and permits using the regular camera holding handle if desired. The male dovetail mates with the female dovetail base and permits the camera to slide from focusing to photographing positions for parallax adjustment. The camera can be locked in desired position by a positive locking-device.

★ The Shiftover has a "stop-bracket" which prevents the camera from sliding off the dovetail base—and is provided with dowel pins which position it to top-plates of tripods having $\frac{3}{8}$ or $\frac{1}{4}$ -20 camera fastening screw.

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY



Composition for the Amateur

By GLENN R. KERSHNER, A. S. C.

While making pictures in Venice, Italy, some years ago I visited the well known International Art Galleries where prize paintings from all over the world were displayed in their own permanent buildings. Following the crowds from one building to another through what seemed like miles of corridors, I suddenly came upon a large group of people clustered around the railing in front of one small painting. I elbowed my way through the crowd, and when I reached the railing I gazed at the painting almost in awe.

The painting was a small one, about one-tenth the size of those on either side of it. It was the picture of a nude girl standing in a shaft of soft light which came from a small window. The girl's hand rested on the foot-post of a bed. My eyes quickly followed down her arm to the bed post; then across the bed to a wash stand on which stood a bowl and pitcher. Then (as though pulled by an irresistible force, my eyes turned to the window and followed the shaft of light back to the lovely figure of the girl. The artist, a master of composition, had painted the side of the room opposite the girl in subdued tones, so that my eyes tarried very little there, and turned almost immediately back to the figure of the girl.

It was a perfect non-exit picture so well composed that your eyes were practically riveted to the principle subject—the figure of the girl. There was not an exit anywhere that allowed your eyes to escape to the frame. Each stroke of the artist's brush had carried your eyes quickly from object to object, always bringing them back to the girl. This is the type of composition that should be striven for in our motion pictures.

Composition is an important subject to study, and one that can give you much pleasure. If you want to spend an enjoyable outing in the country some Sunday, take a view camera with ground glass and a large black cloth to cover the camera and your head, and spend the day composing pleasing pictures. Don't bother shooting; just compose picture after picture. You will find it great fun, as well as being instructive. Pan your camera from side to side until you find what you want: a perfect picture. Sometimes if you find ALMOST what you want, but are troubled because you see an opening through which the eye can escape, fill that opening with a small branch. And while doing so, arrange the branches so that one of them will lead the eye to the next object in the composition, and so on.

If you have no clouds in the sky, drape a branch across the top of your composition and allow a few leaves to creep into the picture. That will stop the eye from turning to the sky in search of something that is evidently missing. If the branch is kept more or less in silhouette it will carry the eye across to the other side of your composition. The angle of a tree, the slant of a roof, or perhaps a shadow, will continue the eye in its circuit. In other words, you so frame your picture with objects, light and shadows, that the frame will be but secondary.

In composition avoid placing a big tree or any other object directly in the center. Also, the horizon should never be in center. The picture should have either a high or low perspective. And NEVER FORGET that the object of most importance in your composition, whether a still pic-

ture, or a motion picture, should be the most brilliantly lighted.

If you are working with your 16mm. camera and have your picture satisfactorily prepared and wish to have some one walk into it, bring them in so they are walking toward the sun or other source of light. This will attract the eye and attention is immediately centered on the person or persons you have selected. Should you bring in a second group, be sure they enter where there is a shaft of light, and when the groups get together you can move in closer and begin your study of composition over again. If in color, by placing cold colors behind warm ones. If in black and white, remember how the arches of an old monastery look . . . light and shadow . . . light and shadow.

There is one important rule of composition, especially when you are going to pan from one object to another. This is to be sure to select the composition for the starting shot and for the shot at the end of the pan before you begin shooting. In composing your first shot of the pan be sure the entire picture is non-exit, except the left side, if you are panning from right to left. This enables a person walking in the scene to keep going without having to go around or over some object that might have been used to close the left side of the frame. In composing the final shot of the pan you must remember to have the left side non-exit, with the spot marked where your actor is going to stop.

This stopping spot should be well thought out before shooting, for when you move in for close shots you will already have picked out the background composition and prepared your sources of light for your reflectors. So the subject will have the main or key light coming from the same direction as in the long shot.

I'm sure, home movie makers, should you have the opportunity of watching such professional Cinematographers as

(Continued on Page 318)



What's a little rain
when you're starved for a glimpse of home?

Official U. S. Marine Corps Photo

GUADALCANAL has two seasons, the rainy and the wet. During the wet season, you just have rain... in the rainy season, you have rain *and floods*.

But G. I. Joe jams down his hat, turns up his collar, and, every time a movie comes to camp, sits in a puddle and dreams he's back in the good old U. S. A. Back where the sun's warm and pleasant on the

back of his neck—back where his feet are dry, and he's dry all over.

You bring the boys "back home" for a few blessed hours every time you send them movies. The motion picture industry has sent and is sending to combat areas hundreds of current features on 16-mm. film for showings in camp and on ship. This is just one of many accomplishments of the movies at war.

EASTMAN KODAK COMPANY, Rochester, N. Y.

J. E. BRULATOUR, INC., *Distributors*

FORT LEE

CHICAGO

HOLLYWOOD

One of a series of
advertisements by
KODAK testifying to
the achievements of
the movies at war



AMONG THE MOVIE CLUBS



AMATEURS AT WORK—Here we see Bernard Esser, President of the Berks Camera Club; William J. Bornmann, President of the 8-16 Movie Club of Philadelphia, and George Swigert of the Berks Camera Club at the sound camera, taken while members of both clubs were on a picnic at Reading, Pennsylvania.

THE other evening I had the pleasure of seeing two excellent pictures, "The White Cliffs of Dover" and "Candle Light in Algeria." One American made; the other British. Both pictures had been photographed in masterly fashion.

BUT—the British producers had recognized the worth of the cameraman, and gave him the same size credit on the screen credits as was given the director. The name of the cameraman who photographed "The White Cliffs of Dover" was buried on one card with the names of the set decorator, wardrobe man, property man and a great array of other minor credits.

I, personally, have long complained because the Cinematographers are not given proper recognition by the American production heads. Basically, the four most important elements that make up a good motion picture are the story, the direction, the acting and the photography. The writers, directors and actors are given proper credit on the screen, but, for some unknown reason, the cameramen do not get the same.

Abroad the cameraman is recognized as one of the real artists of the film profession and is given proper recognition by the producers. It is high time that our American producers do the same. Many a bad picture gets by on the excellence of the photography which makes the audience forget the error in direction, etc.—H. H.

Speed Photography In the Air

NOT only are aerial photographs taken from U. S. warplanes at speeds up to one per second in a fully automatic operation, but as many as seven of the big aerial cameras are operated in synchronization by one controlling device, according to the Fairchild Camera & Instrument Corporation of New York, manufacturers of aerial cameras and the instruments which control them.

The demand for new photographic speeds came with the increase in speeds of Army and Navy planes. Prior to the war, the Fairchild company built its intervalometer—the device automatically operating aerial cameras at predetermined intervals with a range from six to 75 seconds. That is, photos could not be taken at intervals of less than six seconds, nor more than 75 seconds, when a camera was hooked up with the intervalometer.

With the need for more speed, the Army asked Fairchild to provide an intervalometer with a range of one second to 120 seconds. As an answer, Fairchild engineers designed an entirely new unit, which, while smaller in size and lighter in weight, did about twice as much work as the old model. Not only was the 1-120 second interval range provided, but additions, to make the instrument more versatile, included: an extra-picture switch button, allowing the aerial pho-

tographer to take an extra picture if he happened upon an unusual object that didn't fall within the interval timing, without interrupting the pre-determined scale; a re-cycle button which also gives the photographer a chance to take an extra picture, but this time starting an entirely new cycle; a counter for the number of exposures; a warning light to show each time the shutter is tripped; and, a thermostat-controlled electric heater to provide uniform temperatures for the instrument during high altitude flight.

This intervalometer can be installed on the control panel of the plane or any place also handy to the pilot, and thus he operates remotely cameras which may be clear in the tail of the ship.

As the war progressed, the Army began using as many as seven aerial cameras in one plane on joint mapping-reconnaissance missions, and a new controlling device was needed.

It is extremely difficult to operate multiple camera installations simultaneously, as they include units of widely different focal lengths. As an example, at an altitude of 10,000 feet, when a 6-inch focal length camera takes pictures, there is a wide area coverage and a scale of 1:20,000; a 12-inch, less area coverage, at a scale of 1:10,000, and 24-inch, still less area coverage, with the scale 1:5,000.

The resulting overlap in the photos didn't provide the same area coverage in any given strip of pictures, so what was needed was a multiple timing device to provide uniform percentage of overlap in all photos taken from an identical altitude but to different scales.

Fairchild engineers' solution was a camera control unit in which all electric wiring was consolidated in a group of control, impulse and switch units small enough to be put in out-of-the-way sections of a plane, with one control box in the installation providing for pre-set interval timing of photographs for all cameras.

WE NOTE in the trade press that David O. Selznick who gained everlasting fame by producing "Gone With the Wind" and "Rebecca," is not going to insist that the picture houses double the admission price to see his new film, "Since You Went Away."

This writer wants to congratulate Mr. Selznick on his policy. And we hope that other film companies will follow in Mr. Selznick's footsteps.

Why should the theatre-goers, who day in and day out pay to see a lot of run-of-the-mill motion pictures, have to pay higher admission prices when a really good picture comes along. This has always seemed rather of an insult to the public which pays the bills and rarely complains. If the theatre-goer is willing to pay to see a bad picture, he should be allowed to see the good ones for the same price.



I'll always recognize the dress

IF I were to see this movie twenty years from now—I would recognize that dress. The detail is so clear and vivid, even the figures in the dress look real.

There are two very important reasons why Hypan Reversible is the film I use:

1. Its brilliance, high speed, fine grain and balanced color sensitivity make Ansco Hypan ideal for outdoor work.
2. Its high resolving power and effective antihalation coating insure

pleasingly sharp, brilliant projection.

Next time, try Ansco Hypan Reversible Film. You'll get a new thrill when your movies turn out—*better than ever before*.

Ansco Hypan comes in 50 ft. and 100 ft. rolls. Twin-Eight Hypan Reversible is available in 25 ft. (double-width) rolls.

Ansco, Binghamton, New York.



A Division of General Aniline & Film Corporation.

Ansco

(FORMERLY AGFA ANSCO)

8mm and 16mm

HYPAN REVERSIBLE FILM

KEEP YOUR EYE ON ANSCO — FIRST WITH THE FINEST

KODACHROME EXPOSURE CHART

SHOWING LENS OPENING FOR VARIOUS LIGHT DENSITIES

For Kodachrome Regular Without Filter or Kodachrome Type A with Type A Filter

LIGHT DENSITY	FLAT LIGHTING Sun Behind Cam- era Direct on Subject			SIDE LIGHTING Sun at Right Angle to Camera			BACK LIGHTING Sun Behind Sub- ject with Lens Shaded			OPEN SHADE Subject Lighted by Open Sky— No Sun		
	Light Colored Objects	Me- dium Colored Objects	Dark Colored Objects	Light Colored Objects	Me- dium Colored Objects	Dark Colored Objects	Light Colored Objects	Me- dium Colored Objects	Dark Colored Objects	Light Colored Objects	Me- dium Colored Objects	Dark Colored Objects
EXTREMELY BRIGHT SUN	F.16	F.12.5	F.11	F.11	F.9	F.8	F.8	F.6.3	F.5.6	F.5.6	F.4.5	F.4
BRIGHT SUN	F.11	F.9	F.8	F.8	F.6.3	F.5.6	F.5.6	F.4.5	F.4.	F.4	F.3.2	F.2.8
HAZY SUN	F.8	F.6.3	F.5.6	F.5.6	F.4.5	F.4	F.4	F.3.2	F.2.8	F.2.8	F.2.3	F.1.9
CLOUDY BRIGHT	F.5.6	F.4.5	F.4	F.4	F.3.2	F.2.8	F.2.8	F.2.3	F.1.9			
CLOUDY DULL	F.4	F.3.2	F.2.8	F.2.8	F.2.3	F.1.9						

Based on 16 Frames per Second for Cine Cameras, or 1/25 Second for Miniature and Still Cameras.

THE chart shown above applies to Kodachrome Color Film as used in 16mm or 8mm motion picture cameras operating at 16 frames per second, or for miniature cameras with a shutter exposure of 1/25 second, and is for daylight pictures from two hours after sunrise until two hours before sunset, with Kodachrome Regular Film without filter, or Kodachrome Type A Film with Type A Filter.

The Type A Filter must be used for day scenes with Kodachrome Type A Film. The same exposure is required as for Kodachrome Regular Film without filter.

The Kodachrome Haze Filter improves color rendition in pictures made on dull days, in shade or extremely distant views, snow scenes or pictures in high altitudes. With Kodachrome Regular Film no increase in exposure is required. The Haze Filter is unnecessary when using Type A Film with Type A Filter.

The Pola-Screen Type 1A will give very effective color shots of light colored objects or people against blue sky if photographed in side lighting. Will also subdue oblique reflections on metal, glass or water scenes and will soften harsh lighting. Increase in exposure is necessary of at least one and one-half stops.

Light colored objects include beach and water scenes, desert shots, light colored flowers, buildings, people in light colored clothes, shots against the sky, etc.

Dark colored objects include heavy foliage, deep colored flowers, dark ani-

mals, subjects shaded, people in dark clothes, dark colored automobiles, etc.

Medium colored objects include dark and light objects in equal proportions, dark streets with light buildings, close-ups of people in medium colored clothes.

Whenever there is any doubt as to the color of the object, use the center column showing medium colored objects. Best results are obtained in direct sunlight with exposure as near correct as possible. Under-exposure gives dark deep heavy colors with no detail in the shadows. Over-exposure gives pale, light and washed out colors. Exposed film should be processed as soon after exposure as possible for best color results.

(NOTE: The above chart is from the American Cinematographer Hand Book, by Jackson J. Rose.)

PSA Color Division Lists Slide Trades

COLOR slide exchange listing service for camera clubs and PSA members has been established by the Color Division of the Photographic Society of America. The Division limits its service to listing clubs and individuals desiring to exchange color slides, and exchanges must be arranged directly between clubs and individuals.

Among members now listed as desirous of exchanging slides are:

Dr. C. Elmer Barrett, Suite 618-22, Boston Bldg., Salt Lake City, Utah.

L. R. Wilkinson, 1259 N. Prairie, Galesburg, Ill.

L. F. Plummer, 8230 S. Carpenter St., Chicago 20, Ill.

Film Review

Subject: "EYES FOR TOMORROW."

Running Time: 22 minutes.

Producer: Emerson Yorke Studio.

Sponsor: National Society for the Prevention of Blindness.

Credits:

Script—William S. Resnick.

Camera—Irving Hartley and Olle Comstedt.

Narrator—Alois Havrilla.

Music—Solita Palmer.

Direction—Emerson Yorke.

Subject was produced by the Emerson Yorke Studio which since July, 1941, has devoted its facilities and personnel exclusively to the production of training films for the war effort.

Sponsored by the National Society for the Prevention of Blindness, New York, various well known medical, health, and welfare agencies aided in the production of this informative short subject designed to meet specific requirements in the field of sight conservation.

Continuity make-up consists of novel introduction by Alois Havrilla, narrator, and specialized coverage of (a) prenatal care and reduction of blindness through proper treatment of venereal diseases, (b) treatment of contagious diseases including trachoma, (c) increased danger of industrial eye hazards, (d) prevalence of glaucoma, (e) protection of vision among school children, (f) correction or cure of common defects such as myopia, astigmatism, strabismus (cross eyes), etc., and (g) the building of our resistance through regular eye examinations, correct diet, and above all good health habits is stressed as the prerequisite for sound vision.

The Houston Corporation

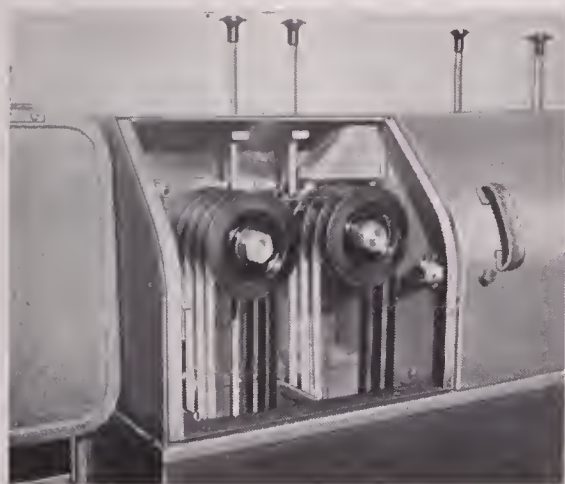
11801 West Olympic Blvd.

Los Angeles 25, California



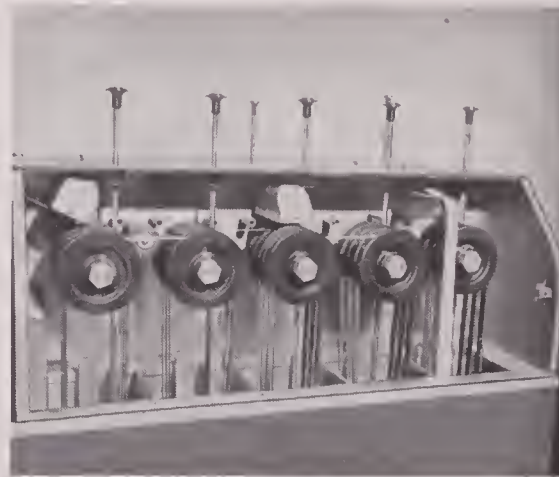
THE HOUSTON MODEL 7

16mm. Negative, Positive and Reversal Developer



Close-up of first developer compartment showing light trap to next compartment.

This daylight operating machine is for limited production of either negative, positive or reversal film, a portable unit completely self-contained. Equipped with variable speed motor with a range of from three to seven feet per minute, refrigeration, air compressor, exhaust blower for the drying cabinet, infra-red lamps for drying, thermometer for solutions temperature, and thermostats for automatic control of the solutions temperature. Power supply 220 volts, 50-60 cycle. Dimensions are 50" long, 24" wide, 41" high, and weight is approximately 850 lbs.



View of second compartment showing re-exposure lamps and method of film travel.

FROM CAMERA TO SCREEN — HOUSTON

Motion Picture Studio and Laboratory Equipment—Developing Machines—Printers—Camera Cranes and Dollies
Miniatures—Mechanical Sets—Engineering and Design Work—General Machine and Jobbing Work

DEVELOPING MACHINES

for

MOTION PICTURE FILM MICROFILM and COLOR FILM

PROCESSES EITHER 35MM. OR 16MM.

COMBINATION UNITS FOR BOTH 35MM. AND 16MM.
AND
COMBINATION UNITS FOR BOTH 32MM. AND 16MM.
POSITIVE AND NEGATIVE
OR
REVERSAL SYSTEM

Simplicity
Flexibility
Capacity

Economy
Security
Control

"The Machine That Cannot Break Your Film"

FONDA MACHINERY CO., INC.

8460 Santa Monica Blvd.

Los Angeles 46, California, U.S.A.

Cable Address: "Fonda"

Our Only Product Is Developing Machines

Hand Shot "Stuff"

(Continued from Page 300)

correct exposure, and is excellent in its informative value to any photographer. One chapter deals at some length on the manipulation of the lens diaphragm and depth of focus but not a word of explanation appears to caution what will happen to that depth of focus if the diaphragm is stopped down only as much as f-8. and the exposure made without the use of some good support for the camera. Therefore, no matter how correct the exposure may be, even if it is correct, the result will be of little value if there is the slightest blur indicated in

the result. In fact, an incorrect exposure made with a camera properly supported, will render a cleaner and more valuable result.

"Even with a tripod, there are conditions when any kind of an exposure, fast or slow, will not be worth while. For instance, photographing mechanized installations of throbbing machinery. Floor, of a sharp focus unless the exposure can or base vibrations will destroy the effort be made faster than the synchronization of the vibration. Under such a condition, if there is light enough to make a fast exposure possible, a hand camera will produce a better result with the camera held firmly in the operator's hand, but

with his body relaxed so as to permit the body to absorb the vibrations.

"When I see so many out-of-focus prints go through this shop, the question rises in my mind: 'WHY, in all the photo-literature of instruction has so little effort, and space, and attention been given to the proper use of a tripod.' Now here is a book of instruction that was issued by the government as a text book on Basic Photography. Exclusive of index, it carries three hundred and thirty-five pages of text. As a technical text book it is good, but of all those pages, only one half of one page makes mention of a tripod, and then only of a descriptive nature. Listen to this:"

"Each leg of the tripod is in four sections and each section should be extended in turn before attaching the leg to the tripod head. The first section of each leg is formed by turning back two sticks, the ends of which spring between and fit into one of the three pairs of sockets in the tripod head. The second, third and fourth sections of a leg are extended telescope-like in a manner readily apparent. In shortening the legs of the tripod it is important that the sections be actuated in the reverse of the order mentioned—that is, that the shortening be accomplished if possible by the single metal-pointed stick forming the extreme end of the leg. If the amount of the shortening thus obtained is insufficient, then shorten the next section. In tightening a section by means of the knurled knobs it should always be seen that the pressure is applied in a solid thickness of one or more sticks. Under no circumstances should an attempt be made to tighten a section when there is a space between the sticks composing it. The obvious result of such tightening will be the bending inward and snapping of the sticks. In closing the tripod, see that the sticks of all sections are pushed in as far as they will go, particularly the metal-pointed end of the single stick should be completely in so as to be sheathed and thus not scratch or cause damage. . . . When ready to photograph, set up the tripod in the manner explained. Spread the legs of the tripod sufficiently apart so that it will stand rigidly and ascertain whether all set screws in the legs have been sufficiently tightened by pressing down on the tripod head. The legs of the tripod should be so placed on the ground that the top is level and sufficiently tightened so that there is no danger of its falling over."

"Rather dry technique, isn't it? Obviously, the use of a tripod, as explained here, is for the mounting of a view camera.

"Now here is a volume on Photo-technique; sells for \$7.50; has 834 pages of text of which one-half page mentions the use of a tripod informatively. It reads thus:"

"The tripod is a necessity in all except candid and sports photography. The tripod must be chosen for the function it is to perform. If it is to support a small camera for a single shot, it need not be so stable as the tripod which must support a heavy camera such as that

used for color-separation negatives. For the small camera the metal folding tripods are suitable, those made in the Orient excepted. In nearly every case these Oriental tripods are 'weak in the knees.' Tripods must be chosen with extreme care. A 9 by 12-cm. camera can be supported on a metal telescopic tripod for a single shot, but, if separation negatives are to be made, a sturdier support is needed. In this case where three exposures must be made from exactly the same point of view, a wooden tripod of heavy construction is recommended.

"The tripod will tend to slip along the floor or surface less if its legs make a fairly large angle with the floor or surface. It will tend to move less when changing films, etc.

Rubber feet are useful on floors; spikes are advisable when the tripod is to be used out of doors."

"Evidently, it is taken for granted by the writers of photo-textbooks that the photographer should know when, where, and how to use a tripod, without going into detail about it. In other words, anybody using a camera is supposed to think, and do a lot of it.

"Once in a while you fellows bring in a negative from which a fairly good CONTACT print can be made. Later, you come back and order a 'blow-up' and when it's delivered to you, you blow up and want to know WHY it isn't sharp. With much gusto you go into detail and oratory to tell how you 'stopped-down' the lens to f-11. and made your exposure at 1/25th of a second in good bright light. And again I have to explain how much better the result would have been had you used a good support for the camera instead of trying to appear professional by holding the camera in your hands, for at the moment of exposure you probably synchronized a healthy heart-beat with the shutter click, thus registering a trifle jar-movement, just enough to register an out-of-focus exposure, although so slight that it would go unnoticed in a contact print, but would show up in a 'blow-up.'

"As I have said before. Every camera is fitted with a screw threaded socket for a tripod. Get the habit of carrying a tripod along with the camera, and use it. For the small camera there are many contrivances to use in place of a tripod that screw into the receptacle on the camera intended for that purpose. Some such accessories will clamp onto the back of a chair, or the railing or picket of a fence, others are made to resemble a walking stick and can be extended to hold a camera at eye-level. They are all good accessories if used thoughtfully. Even a table-top, or any substantial resting-support upon which the camera can be placed is insurance of a good sharp negative exposed under 1/50th of a second.

"Don't try to be professional. When you become a professional it will be an unconscious realization and you won't have to try to appear as one. Profes-



A MARINE "Tells It" TO DeVRY

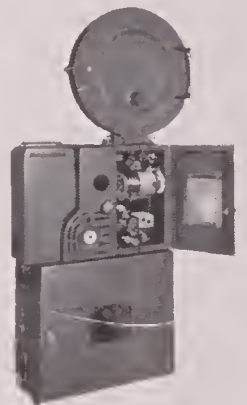


Official U. S. Marine Corps photo of Marine landing on Rendova Island in the Solomons.

"I Am Constantly Surprised at the Punishment Your Projectors Can Take!"

You've heard the expression, "Tell it to the Marines!" Today a Marine *tells it* to DeVRY—a sergeant in the Second Marines writes from the South Pacific: "I have constantly been surprised by the amount of punishment your projectors will take—first off, in the holds of Navy Transports . . . Secondly, over rough jungle terrain in trucks, without roads to travel . . . Third,—while stationed at Paekakariki, New Zealand—not once but twice, the machines went through what is known as Southerly Gales, BOTH times—in our improvised tent theatre booth—the machines were dashed to the floor from a 32-inch height. All four DeVrys are still in good working order—even though they have taken severe punishment in their 16,000 miles of travel with the Second Marines!"

Thus, out of the war's relentless proving ground comes unchallengeable proof of the ability of DeVRY motion picture cameras and projectors to take day-in, day-out punishment and still deliver the finest in screened performances. Proof that you'll want to remember DeVry when you go shopping for V-Day's best in motion picture sound equipment. DeVRY CORPORATION, 1111 Armitage Avenue, Chicago 24, Illinois.



WRITES Sgt. Walter R. N. U.S. M. C.: "DEVRY'S projected the first movies on the Solomons in 1942. On Tulagi's King George Field, Columbia's 'YOU BELONG TO ME' starring Barbara Stanwyck and Henry Fonda was screened Nov. 4, 1942"—by DeVry 35 mm. semi-portable sound projectors, as above.

Buy Another War Bond Today



STARS awarded for continued excellence in the production of motion picture sound equipment.

DeVRY

New York • CHICAGO • Hollywood

sionals who KNOW their game do a lot of thinking before they make an exposure with ANY kind of a camera. They don't take chances wasting film these days unless the chances are against them, then they predicate their action to improve on failures of past experiences.

"Photography is not a catch-as-catch-can business. Photography is a science, and as such requires a lot of analytical thinking.

"Again. Use a tripod for those exposures under a speed of 1/50th of a second. Results will be worth it."

SEND YOUR
CHRISTMAS MAIL
BEFORE OCT. 15
TO YOUR MAN
AT WAR!

Aces of the Camera

(Continued from Page 301)

to try out, with another fellow, for the leading role. It was a little more than Russ had bargained for because acting had never been one of his ambitions; but the director was the director. He breathed easier when the other fellow got the role. The other fellow being Gary Cooper. Russ was happier to get the job as the new star's double and stunt man.

Probably because they forgot to assemble a full set of nerves in the man's body Russ enjoyed the exciting and lucrative assignments he obtained as a stunt man. He doubled for Cooper in most of that star's early pictures, and on occasion, drew assignments guaranteed to cure boredom even at the expense of marring the chances for a peaceful old age. One of these was an almost tragic stunt he performed at Sonora Dam. The action called for a slide down a wire strung from the top-most tower of the dam, which was at that time under construction, to a spot several hundred feet below. It looked like a run of the mill job—he says—with the cable stretched at a 45 degree angle. All he had to do was climb on it and slide down. An easy way to make a living. But something went wrong. When he climbed on the cable he slid only about twenty or thirty feet, and then got stuck. It seems the cable was new, and had a dressing of grease that acted as a brake and prevented him from

weight on the cable caused it to stretch, so that he hung, suspended over very rough country, in the middle of a sagging bulge. Slowly he inched his way forward over the seemingly endless wire, his hands becoming so swollen inside his gloves that he could no longer hold on tight, but had instead to hook his tortured fingers over the wire and hang on that way.

The company on the ground, with Archie Stout on the camera, were in an agony of suspense in their inability to do anything to help him. And the construction foreman on the dam didn't make them feel any better when he told them that it would only be a matter of moments before Russ dropped off into space. He said he had seen other men get themselves into a similar position on a wire, but none of them had been able to stand it long; their own weight became multiplied the longer they hung, causing their muscles to knot and the circulation to stop.

Russ' muscles were knotting all right, and his weight on the wire was causing it to cut into his arms so that the blood came through the pores of his skin. But if he felt like dropping off all he had to do to make him think better of it was to look down at the mean looking rocks several hundred feet below. By managing to alternately rest his hands, then his arms, then his feet and legs, sliding any further. On top of that, his he finally managed to struggle to the end of the cable. But he says it was the

toughest spot he was ever in; a terrible ordeal that lasted for thirty minutes and seemed like thirty hours.

If Russ says that was a really tight spot we must take his word for it; because he would seem to be in a position to know. During the making of the picture "Wings," for instance, he had the rare experience of falling out of an airplane without a parachute, and living to tell about it.

He was up in a Martin bomber, shooting some test shots with an Eyemo through the bomb bay. To get into position he removed, against orders, his bulky parachute and forgot to put it back on when the shots were completed. Instead, he found a nice open cockpit, complete with a mount for a machinegun, from which he could stand and admire the scenery. And it was beautiful he tells us. Suddenly, the plane hit an air pocket and plummeted down two or three hundred feet. That is, the plane did but Russ didn't. He found himself suddenly out of the cockpit, on top of the fuselage. With great presence of mind he grabbed one of the two metal bars, part of the machinegun mounting, that protruded above the cockpit for a matter of 18 or 20 inches, and hung on for dear life.

When the pilot looked back and saw Russ straddling the fuselage he was very annoyed. And he kept motioning vigorously with his hands and arms for him to get back into the cockpit and quit horsing around. Russ says he has no idea why the fellow thought he actually wanted to be out there, but they were all friends again when they landed.

In 1928 and '29 Russ went back to stunting because at that time he found he could make more money risking life and limb than he could assisting on the camera. And he did very well, turning over stagecoaches, jumping from one thing or another, and crashing cars. In fact he had the reputation for being the only man in Hollywood who made anything out of a crash in '29.

His familiarity with the lore of the old West has been a great advantage to him and his producer on many occasions. For instance, there is nothing more difficult, we understand, than to get modern cattle to stampede toward a camera. In the first place, the more highly bred and pampered cattle being raised today are difficult to scare to such a pitch of excitement; and, in the second place, even when they do get them worked up they will shy away from anything they don't recognize. And it seems they are particularly cagey about cameras. Now as any one knows, a good stampede is quite frequently the high spot of an action drama; and as any cameraman knows who has tried it, the problem of getting the cattle in the right position past the camera, plus the added problem of successfully combating the clouds of dust that always accompanies such a maneuver, is one to try the patience, as well as the ingenuity of a saint.

Russ would be the last person in the world to claim to be a saint, but he

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solved, most successfully, the vexing problem of shooting a cattle stampede by the ingenious method of putting his camera inside a cowhide mounted to look like the real thing. And he says it works like a charm. The cows, a trusting lot it would seem, suspect nothing amiss from an object so like themselves. They stampede toward and past the cow stuffed with Russ in the most cooperative manner, while he cooperates by cranking a little slower in order to give the thing more of the vigor of reality. Close-ups of the milling cattle he obtains with a Eyemo shot from the back of a horse, which he rides gently among the herd; being careful to always keep the wind blowing away from the camera. Shots like this, intercut with footage of pounding hoofs, make a very realistic and thrilling stampede sequence.

Having escaped practically unscathed after photographing all kinds of cattle under almost every conceivable condition, which even includes having a nasty tempered bull jump through a store window, it remained for a milk cow to give him his biggest thrill. It was during the filming of a story that called for a calf to be petted by the leading lady while she was being serenaded by a guitar playing cowboy out on the range. It must have been a very pretty scene, out on the moonlit prairie, but the calf wasn't a bit interested. He, or is it she, wanted his mother. And his mother, in an off-stage corral, wanted him. But nobody bothered about her, least of all Russ, because the corral fence was high and the wood was strong. His first hint of trouble was the sound of a bad tempered bellow behind him and he looked around just in time to see this discontented cow come charging.

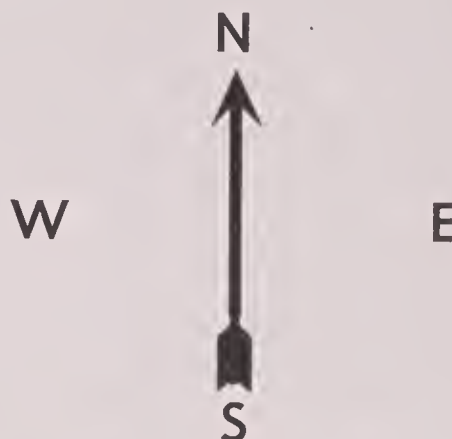
As the animal's horns swept camera and tripod up and out, Russ rolled to safety, saw a cowboy hero and his light of love light out, and a good guitar disdainfully stepped on by the angry mother, her anger forgotten as soon as she was able to exchange licks with her offspring.

In the last year the Government has used Russ' special skill with a camera in the outdoors to film 25 training pictures for the Army, and he is currently working on another. Such a schedule doesn't give him much time for trout fishing, but it does keep him outdoors. And he probably has his eyes open meanwhile for some more Western locations to add to his already formidable cinematic triumphs.

Information Please Is Well Received

THE *Photographic Information Please Questionnaire* being circulated by the Kalart Co. has been well received by the photographers to whom it has been sent. The percentage of returns has upset all former ideas of direct mail inquiry. The majority of the questionnaires were completely filled out and many valuable comments have been received.

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New Filmosound Releases

RHYTHM OF THE ISLANDS (Universal). No. 2532, 7 reels. Synthetic "Paradise Island," maintained to bolster tourist trade, with natives and white beachcombers hired as "extras." Island sold to purse-proud dowager, when real native owners take over, to enforce romantic and other adjustments. Plenty of music and dancing. (Allen Jones, Andy Devine, Jane Frazee.) Available from October 16, for approved non-theatrical audiences.

IT COMES UP LOVE (Universal). No. 2521, 6 reels. Young dancer reluctantly agrees to invade the upper crust of the social register. Clean, fast-moving comedy plot, involving mainly the 'teen-agers, but with amusing elder angle. (Gloria Jean, Donald O'Connor, Ian Hunter, Louise Allbritton.) Available October 9, for approved non-theatrical audiences.



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Composition for the Amateur

(Continued from Page 308)

Phil Tannura, James Wong Howe, Arthur Miller, Len Smith, Karl Struss, Karl Freund, Ray Rennahan, Charles Lang, and the many other members of the American Society of Cinematographers, study and prepare the compositions, it would be of tremendous benefit to you in the making of your pictures.

Here's another important suggestion in composition that may help you when you are in the field. Should you be shooting toward a stream or road, always have them exit toward one of the corners of your picture, and NEVER in the center, the person viewing it. If you bring the tumbling stream will imagine he is standing on a rock, or is hip deep in the stream himself. If it is a road, and a car is coming toward the camera, the person viewing it will begin to wonder when he will be hit by the car. By bringing it toward the corner you give your audience the feeling of security, as well as giving them much better composition with a perspective view. This same rule can apply to the corners of rugs, tables, shelves, etc. This you can work out for yourself. In the accompanying sketch you will find what I refer to in connection with the pan shot composition. I suggest you cut a hole in a piece of cardboard the same size as your ground glass or aperture. Slide this across the illustration and figure your shots.

Langenegger to Business Films

JOHAN R. Langenegger, the first new member of Studio Mechanic's Local 52, I.A.T.S.E., to be accepted in five years, has joined Business Films, Washington, D. C., as head of the sound department.

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STOLEN CAMERA EQUIPMENT

THE following list of cameras and camera equipment was stolen from the home of Len H. Roos, A.S.C., 11905 Hartsook Drive, North Hollywood, Calif., on Sunday night, August 6, 1944. Readers of this magazine are asked to immediately report to the police, and telegraph Mr. Roos collect, if they see any of the items listed below. Dealers in used equipment are asked to watch for persons offering the stolen items for sale:

AUTOMATIC ROLLEIFLEX CAMERA No. 699546 with Carl Zeiss Tessar F3.5 7.5 CM lens No. 2334283.

Bayonet Mount Filters:

Lt. Yellow	No. 766696
Lt. Green	No. 832903
Lt. Red	No. 815060
Duto 0	No. 641885
Carl Zeiss Bernotar	No. 5547
Med. Yellow	No. 782061
Med. Green	No. 806125
Ultra Violet	No. 638346
Duto 1	No. 800467
Sky Adjustable	

Rolleiphot No. 418719

Proxar I. Bayonet No. 597215 and No. 573092.

Rolleipar I. No. 721749.

Proxar II. Bayonet No. 600675 and No. 602631.

Rolleipar II. No. 96395.

Rollei Panoram Attachment No. 714483.

Rollei Bayonet Sunshade.

Extra locking lens cap.

3 Antaneous releases.

Black leather carrying case.

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CINE KODAK SPECIAL CAMERA No. 4993

Fitted with Magazine No. 6516.

C type lens turret.

E.K. Special extra Magazine and fitting No. 6517.

Reflex Image Magnifier fitted to camera.

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T.H.C. F1.5 lens No. 243915.

K.A. 2" F1.6 lens No. EC 629.

K.A. 4" F2.7 lens No. 8-2663.

Lens Adaptor.

Kodachrome Haze Filter in mount.

Type A Kodachrome Filter.

C.K. Telephoto lens adaptor ring.

2 Telephoto lens adaptors.

Cine Special lens adaptor W.A.

Lens Finder Glass Assembly for 1" F1.9.

Lens Adaptor W.A. and Telefoto Type C.

15MM. T.H.C. F2.5 lens in adaptor No. 262055.

Leather carrying case.

CONTAX III CAMERA No. G 12088 and

E. R. Case.

F.2 Sonnar lens No. 2521946.

ZEISS IKON NETTAR CAMERA Model No. 515

with Klio Shutter.

Nettar Anastigmat F4.5 7.5 CM lens.

Leather carrying case.

BELL & HOWELL EYEMO 71-C Camera 35mm.

No. 149904.

47mm. T. H. Cooke F2.5 lens No. 169298.

Goerz Hypar F2.7 lens No. 752995—4".

Goerz Dogma F4.5 lens No. 753437—6".

1" F.2 Speed Panchro lens in Type C mount

No. 259581.

Filters E.K. VI and Rings.

WESTON METER No. 877122 Model 720 and

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WESTON METER No. 2405215 Model 715 and

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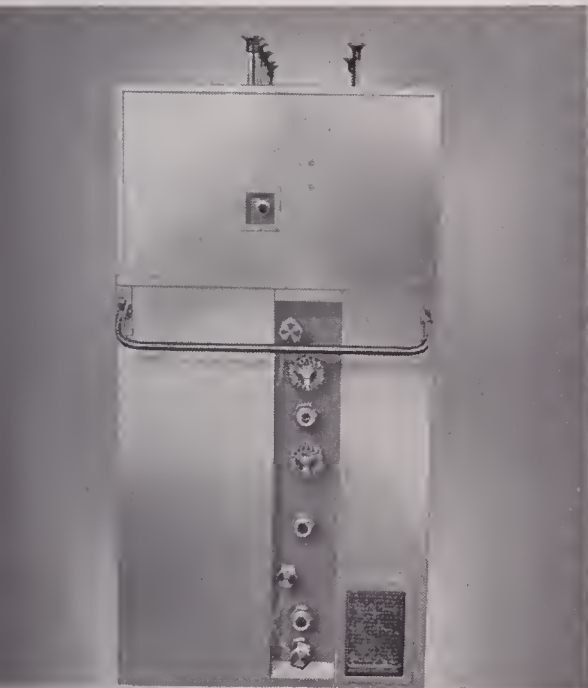
A New Portable Processing And Editing Kit

(Continued from Page 295)

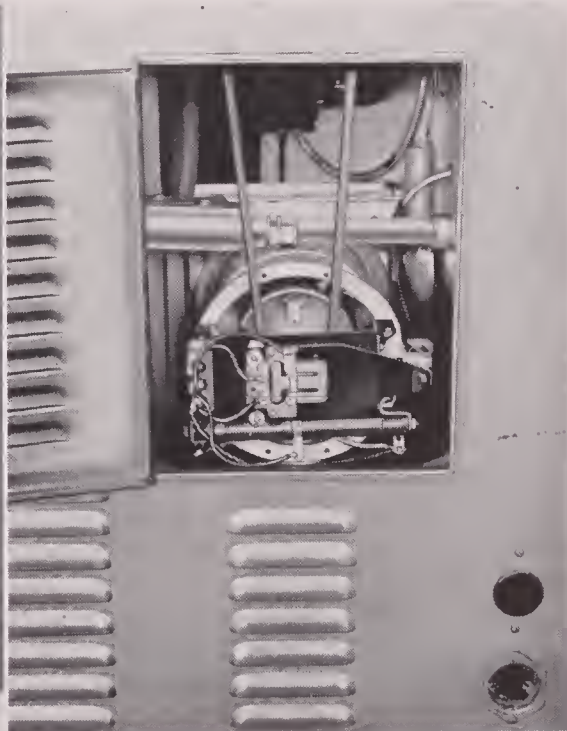
less steel base for providing power for the developer circulating pump and for the compressor for the air squeegee. All the necessary hose and couplings are packed in this lower compartment, and there is still room for additional equipment such as flanges, staplers, extra leaders and spare parts.

This machine is certainly a far cry from the huge developing machines seen in studio laboratories. The Houston Corporation has succeeded in reducing the size of these practical units to the amazing low weight of the 293 pounds for the developer itself, and the darkroom with all accessories only 295 pounds, which greatly facilitates transportation.

This unit has no automatic temperature regulation. However, a similar unit, but approximately 150 pounds heavier, is available and contains automatic refrigeration and heating for the solutions.



End of machine showing fittings for water, air and siphon, also air filter.



Main drive motor showing rotary governor speed control mechanism.



Darkroom showing viewer position for operator.



Darkroom showing changing bag sleeves.

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Mirror Pictures Reflect Your Cleverness

(Continued from Page 304)

having both the original subject and the reflection sharp, you will have to stop down your lens diaphragm as far as possible to gain depth of field. Then, a compromise between your subject-mirror distance and mirror-image distance would give sufficient sharpness throughout the picture. This would now equal only the distance from camera to mirror, in other words.

Proper placement of lights is very important in mirror photography. Lights must be adjusted so that both the original subject and the reflected image show clearly. They should be aimed in the direction of subject from a point near the mirror, in such a manner that no direct light rays strike the camera lens. A lens shade is of great value in cutting out this stray light. The model herself, if placed between the main light source and the camera, will tend to shield out unwanted light. Always view the scene from the camera's viewpoint, not the photographer's, as reflections visible from the former position may not be seen from the latter vantage point, and vice versa. Usually, by changing the camera angle slightly, or shifting the lights a trifle, the composition desired can be attained. Sometimes a black or neutral background drape placed behind the model improves the effect, by eliminating unnecessary and unwanted details from the scene.

By using two or more mirrors, many trick shots are possible, as the result of the multiple reflections, caused by the model being reflected and re-reflected between mirrors. For instance, a single figure will look like a long row of persons, if placed between two nearly parallel mirrors.

Next time you take pictures, include a few mirror compositions. They will reflect your photographic cleverness.

Dutch Leaders in London See "Dr. Wassell" Premiere

THE Netherlands government in England, from the Prime Minister down, was represented at the London premiere on August 10 of "The Story of Dr. Wassell."

The guest list included Premier Pieter S. Gerbrandy; Minister of Overseas Territories, Dr. Hubertus J. van Mook; Minister of Education and Arts, Gerrit Bolkestein; Minister of Shipping and Fisheries, J. M. de Booy; Minister of the Interior, J. A. W. Burger, and Major-General H. J. Phaff, Inspector-General of the Netherlands Army in Great Britain and Aide-de-Camp to Queen Wilhelmina.

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Lighting Conventions

(Continued from Page 306)

"In addition," Duggan said, "Some of the boys were shooting from the aisles, some from the rafters and, consequently, the light had to come from just about every place and was kept on continuously because we never knew when some one out of our range of vision was shooting. The main newsreel platform on the convention floor was placed far back in one corner so that with a 1-inch lens a great expanse of stadium was included in the shot. In other words, the speaker's platform was constantly included in the lens angle. For this reason it was necessary to raise the level of general illumination to within about one stop of the level of the speaker's stand. This was done so that the printing light could be adjusted to proper exposure on the wide angle shots without the area on the speaker's platform and the surrounding territory giving a 'burned up' appearance."

Duggan, who has supplied lights for location shots on Hollywood productions in the middlewest, further stated:

"To reiterate, we would get by with very little light on the general shots if it weren't for the fact that some of the boys were using long focus F 5.6 lenses on the speaker himself, while the cameraman next to him might be making a 1-inch lens shot.

"The entire lighting setup which, incidentally, was contained on three platforms, was set for complete coverage of the entire convention floor. This made it unnecessary to do any adjusting or moving of the lamps themselves in case of Eyemo operators shooting personality stuff, demonstrations and so on which might occur at any point over the entire floor area. These cameramen did not require, due to their equipment of F 2 and F 2.5 lenses, additional light at any particular focal point where they might be working.

"The lights were manned by a crew of 15 electricians who were directed from the main camera platform through an inter-communicating telephone system.

"These political shows," said Duggan, "without doubt produce greater concentration of 35mm. motion picture outfits than is possible even on a large Hollywood production. To secure complete coverage, which includes six newsreel companies in addition to the March of Time, an estimated 150,000 feet of film was exposed at each of the three-day conventions—a total of 300,000 feet of 35mm. negatives.

"The next convention in 1948 will undoubtedly be shot in color which will require four times the light. It is our guess that the delegates will go on strike."

Fairchild Honored

FAIRCHILD Camera & Instrument Corp., New York, manufacturers of aerial cameras, navigation and electronic instruments for aircraft, and communications equipment, has been assigned an "approved quality control" rating by the U. S. Army Air Forces. A majority of the output of the Fairchild factories goes to the Air Forces.

Assignment of this rating, the Army told the company, is because Fairchild has demonstrated its own inspection organization can be entrusted with full responsibility, that its products meet all requirements established by the Army, and duplication of inspection during detail fabrication by Air Corps personnel will be eliminated.

White Star to DuPont Employees

THE men and women of the Du Pont Company's Photo Products Department Plant at Parlin, N. J., have been notified by Robert P. Patterson, Under Secretary of War, that they have been awarded a White Star to affix to their Army-Navy "E" pennant.

The Du Pont Photo Products Department has been supplying the government with quantities of uncoated film base, and many types of photographic film; namely, medical and industrial X-ray film, microfilm, motion picture film, still camera film and photomechanical film.

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AKELEY 35MM CAMERA, COMPLETE outfit, Mitchell finder, 6 lenses with matched finder objectives, 10 magazines, motor and battery case, gyro tripod. Inquire Willard Pictures, 45 W. 45th St., New York, N. Y.

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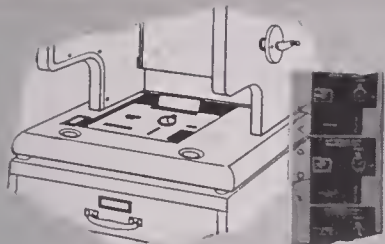
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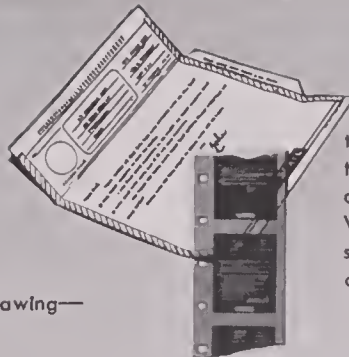
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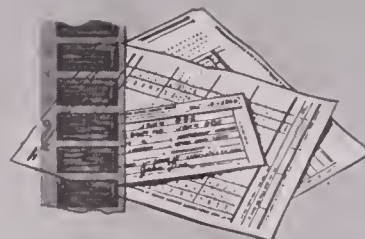
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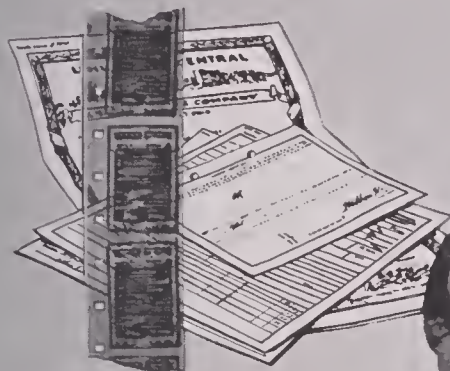
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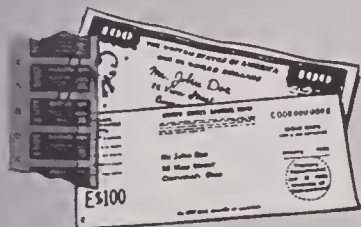
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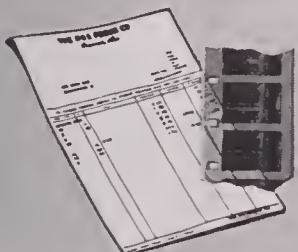
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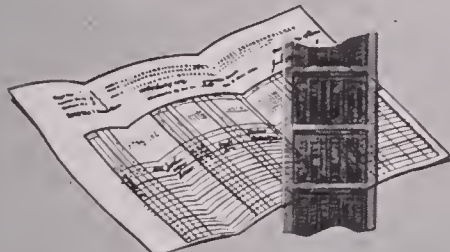
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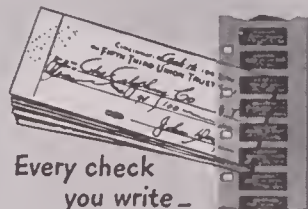
Your Account Record...
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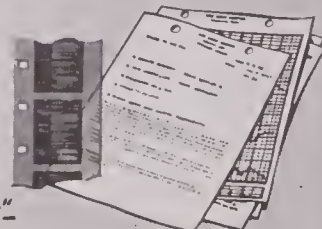
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every other time—is now on
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MY
CAREER
IS IN
FILMS?*



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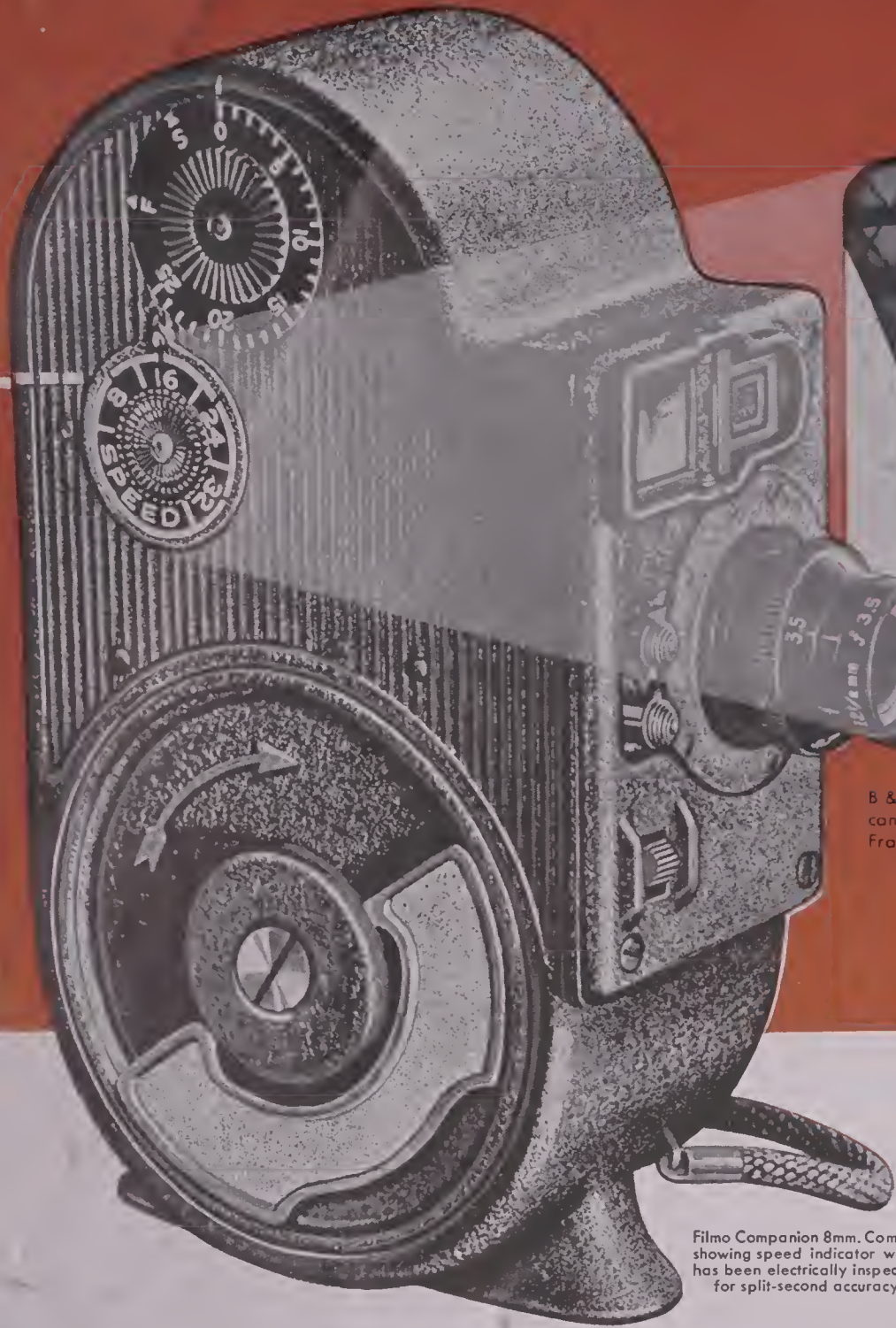
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a warship; just a cargo vessel?—how,
desperately needed supplies in the Solomons,
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In This Issue ... Part

Movie Tricks for Amateurs

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October
1944



Dress rehearsal for film

EVERY FOOT of Du Pont Motion Picture Film must pass a *visual* inspection before it is approved for shipment.

On specially designed equipment, such as this, all Du Pont film stock passes before the keen eyes of alert inspectors. Thus even the slightest blemish can be detected and eliminated.

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AMERICAN INEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

OCTOBER, 1944

NO. 10

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THE FRONT COVER shows Director of Photography Ernest Laszlo, A.S.C. lining up a shot during the filming of Paramount's "Two Years Before the Mast", in which Alan Ladd, Brian Donlevy and William Bendix are starring. This full spread of canvas on 92-foot-high masts was unfurled on the movie ship Pilgrim, an accurate reproduction of the original historic brig. The camera crew and Director John Farrow are high in the air to the left on a camera boom.



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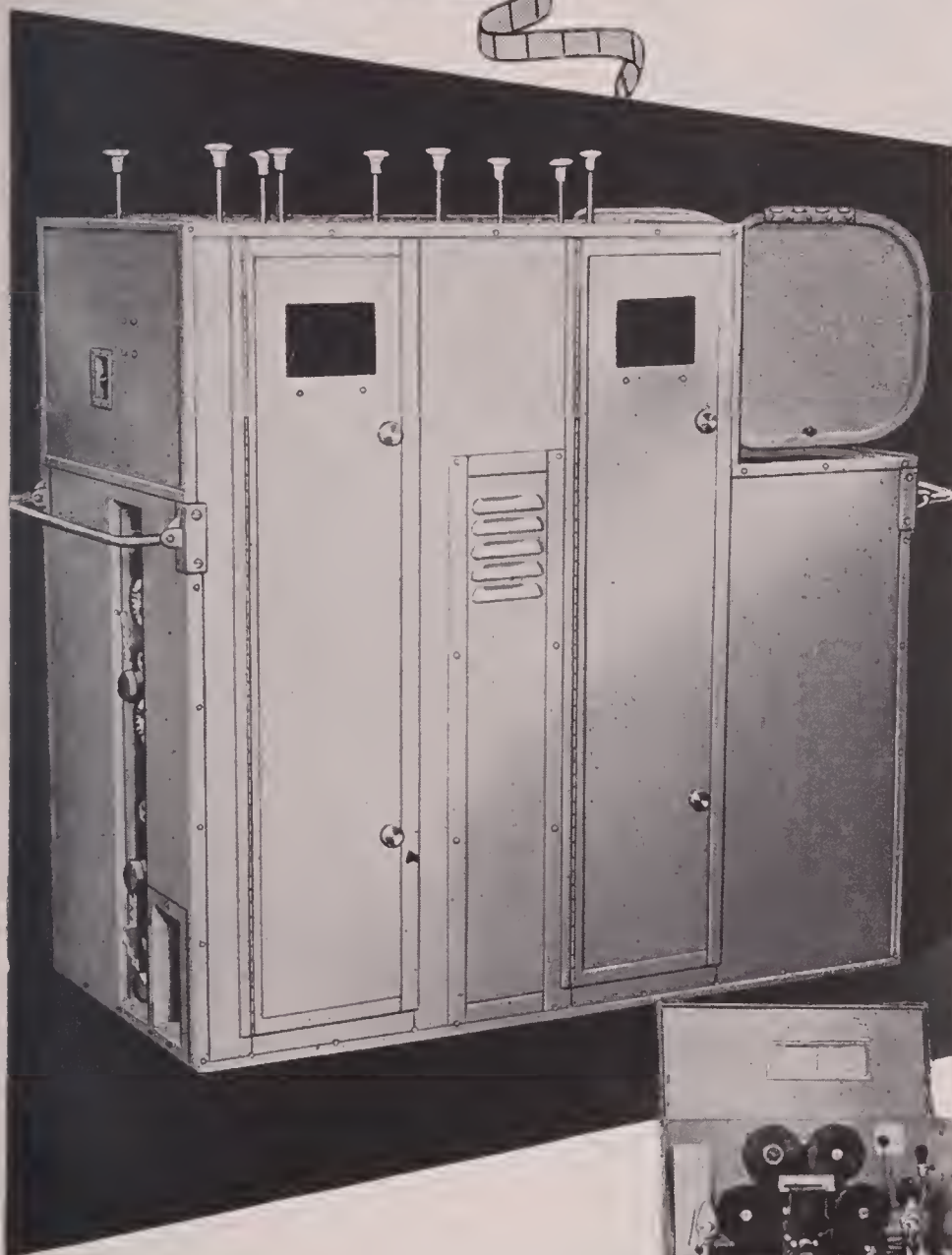
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Does the complete

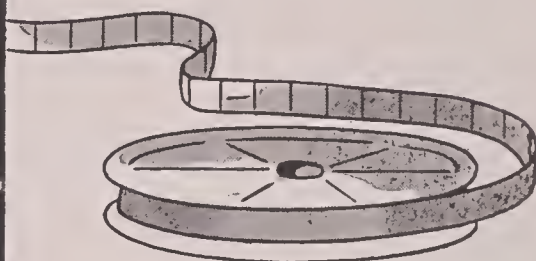
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The Model 9 Kit for 16mm film includes the processor, and the portable darkroom containing necessary rewinds, printer, rotary prism viewer for editing, and splicer.



Houston



"RECORD IT ON FILM"



MISS BRAZIL—That was the title conferred in 1940 upon Maria Belmar, above, when she competed with hundreds of other Brazilian beauties. She came to Hollywood to play in the motion picture, "Brazil", and has remained ever since. Currently she is seen in David O. Selznick's film, "Since You Went Away". Above photograph by Juan Marquina.

ACES of the CAMERA

Chas. Clarke, A. S. C.

By

W. G. C. BOSCO

MANY and varied, and frequently bizarre, are the stories people tell of the events that lead up to the launching of their respective cinematic careers. But few can claim the distinction, and we spell it that way advisedly, of having been launched on his chosen way by a succession of offensive aromas—if we may be delicate about it. In fact, the only man we know who can make such a claim is Charlie Clark, ace cameraman for Twentieth-Century Fox, and third v.p. of the American Society of Cinematographers. Just exactly how a few bad smells happened to put Charlie on the road to fame and fortune will be told later on in the article. We could tell you now, but we use this device to get you to read on, and get a gander at the ads on the other page.

Charlie inherited his enthusiasm for photography from his father, who, many years ago, purchased one of those new-fangled camera contraptions complete with wet plates, and everything. That is everything but a book of instructions. Clarke Senior thought it was a wonderful idea; he could see a big future in photography for those who got in on the ground floor, and for those who would properly equip themselves. He could see it all. He had the vision, and he had the equipment. But he didn't have any luck. Something always seemed to go wrong.

Slowly but surely, as each batch of pictures failed to materialize, his enthusiasm grew colder and colder until one day, outraged by the perfidy of the whole thing, he threw the equipment, wet plate and all, into the trash can. And the subject of photography was henceforth never mentioned in the Clarke household.

It was in such barren soil many years later that Charlie tried to replant the seeds of photographic enthusiasm, born in him, and fanned into flame by an advertisement in his Sunday School paper which promised a camera and equipment for only twenty-five cents (!) and hinted darkly at a future in photography.

But Charlie's father would have none of it. The episode had brought back poignant memories of his own thwarted ambitions as well as many bitter memories of the manner in which he had squandered the family savings on his venture into the photographic art. Like any good father he wanted to try and save his son from an experience he knew would be bitter, and so Charlie's first attempt to become a cameraman ended in failure.

There is no doubt that Charlie's father said a lot and made quite an impression on his son; but it was not a very lasting impression because Charlie took the first opportunity that came his way and quit school at the age of sixteen to go to work for a photographer. No pay went with the job, but the photographer promised to teach him the business.

Week after week Charlie carried on at his wageless job, waiting as patiently as he could to be initiated into the mysteries of photography, to be taught the business. But all he got to do was sort negatives. The only mys-

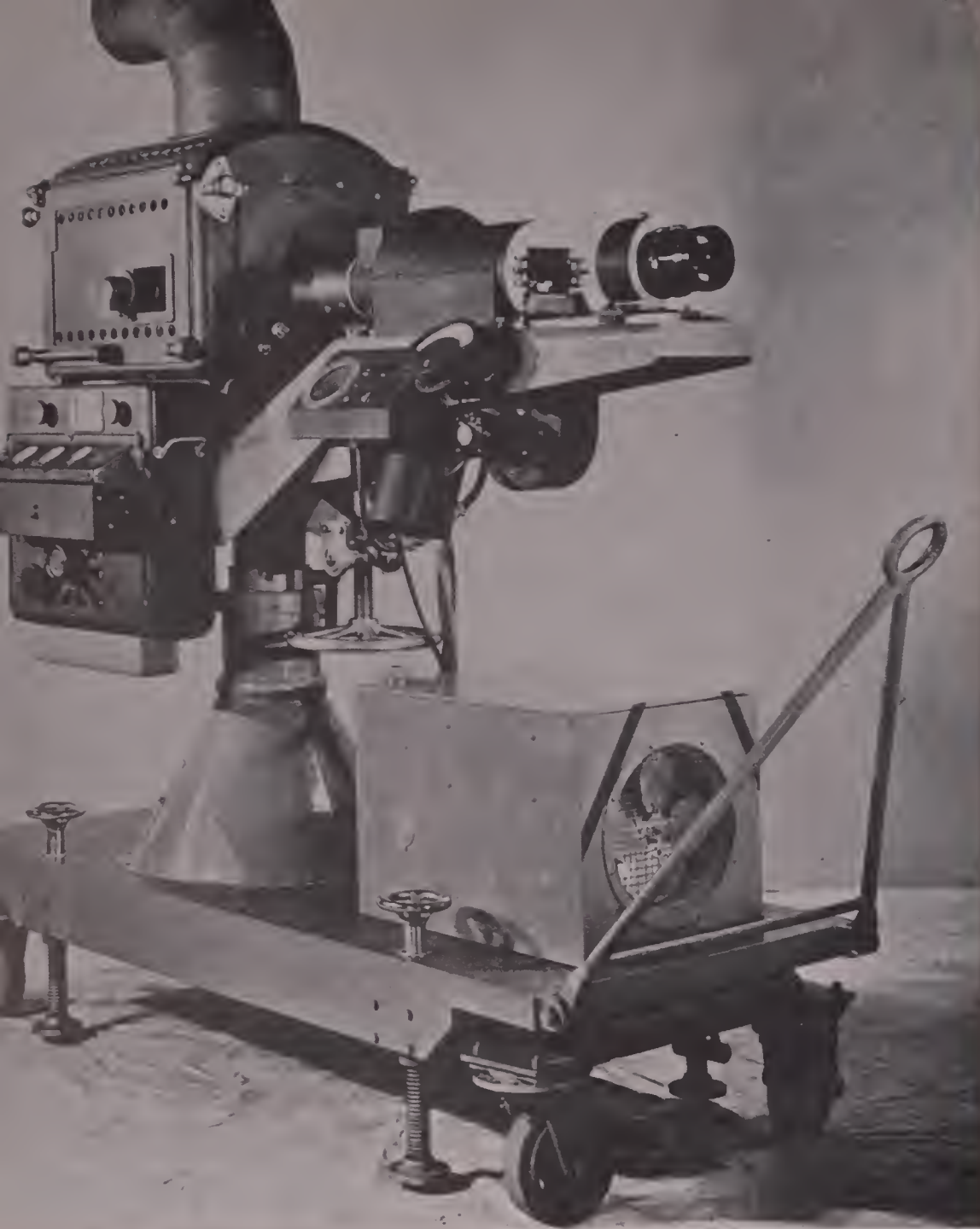
teries he got an insight into was the constant one of missing plates. And Charlie decided that instead of teaching him the business, they were giving him the business. After several months he was only sadder, but no wiser. So he quit.

He quit just in time to join the army and get into the War, but as soon as that was over he got back into the old groove of answering ads. This one wanted "a young man to learn the photo and art business." He should have known better, but he took the job when they offered it to him—at ten dollars each and every week. The salary looked good after Army pay—and he found himself getting into the "photo and art business" via the lantern slide route; his particular assignment being the fascinating and stimulating one of cutting pictures out of old magazines and pasting them on glass.

The head slide maker was Fred Gage, who at the present time enjoys an enviable reputation as head of Warner

(Continued on Page 349)





Left: Fig. 1. Paramount transparency stereopticon, operating side showing adjustable plate holder and lens mount.

High-Efficiency Stereopticon Projector For Color Background Shots*

By Farciot Edouart, A.S.C.**

YEARS prior to the advent of Motion Photography, when Edison invented his Kinetoscope, back in 1892, the old "Magic Lantern," with its oil lamp light source, was just the thing for an exciting evening's entertainment. And how well most of us can recall the various stages of development and advancement made through the more recent years, from the kind of lantern-slide pictures we enjoyed as kids, to the type of screen entertainment and artistry we now enjoy and demand.

In keeping with the color motion pic-

ture production demands of today, Paramount has designed what we believe to be a most modern and up-to-date type of "magic lantern" or stereopticon projection equipment, incorporating a specially designed relay-optical system, with synchronizing heat-absorbing shutter, and powered with the latest type Mole-Richardson projection light source (Fig. 1).

This stereopticon was developed to project natural color slides, in connection with the transparency process on color production, and constitutes a long step forward over the first stereopticon developed at Paramount along the middle part of 1932 for black-and-white transparencies.

The use of hand-colored slides in connection with transparency process pro-

duction has long been used, but at best this medium has been far from satisfactory for a number of reasons. First, the basic monochromatic values and density of the plates seldom permit the correct reproduction and richness of true color. There is the ever-present problem of coloring the slides correctly and evenly for enlargement to a screen picture of any size, a job requiring the most meticulous skill, care and patience. Then there is the difficulty of securing stable nonfading color pigments and dyes that will stand the heat and intensity of the Super-Hi arc light. Added to these, there is the troublesome problem of securing heat-resisting, nonbreakable glass plates that will stand the terrific heat necessary for sufficient light to rephotograph in color. These are just some of the problems of using artificially colored plates.

Obviously the best solution to the problem was to project and photograph natural color. To do this required 3 major steps, each in itself a major necessary link in the accomplishment of the whole:

(1) The duplication in quantity of correctly distorted, non-fading natural color prints $3\frac{1}{4} \times 4$ inches in size. In this connection, it must be realized that the light source, condensers and optical system, slide glass, and the translucent projection screen used all act as a cumulative filter on the projected image. Therefore, the slide reproduction must be distorted in color to allow for this, so when finally projected the image should appear in the correct color balance to the camera as originally intended.

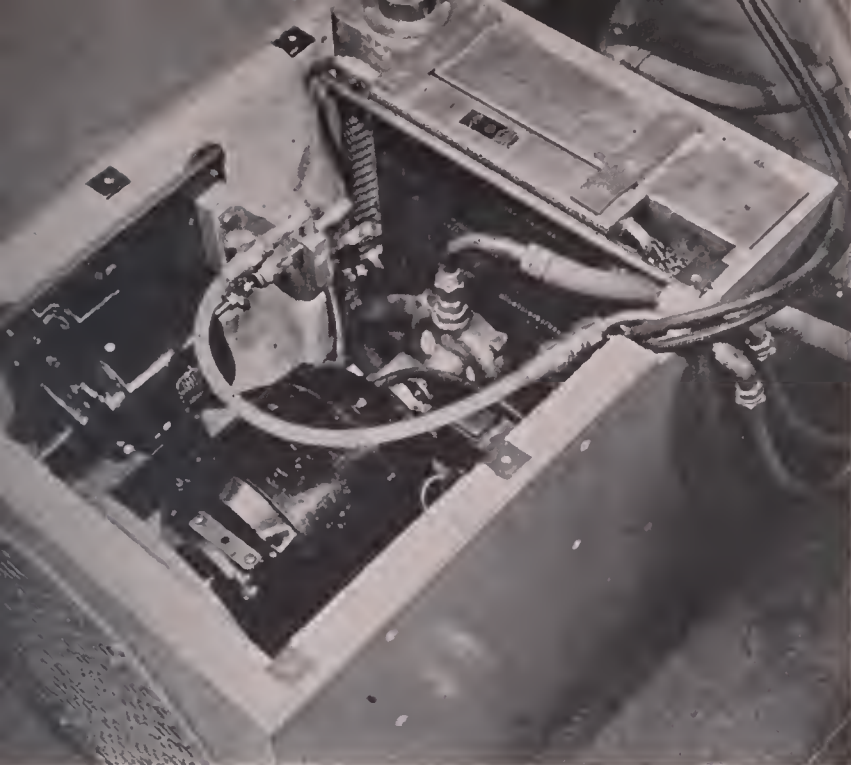
(2) The transferring of these duplications to a heat-resisting glass, water clear and free from bubbles or striae, and cemented in a manner to resist the most intense heat without peeling or separating from the glass support and causing Newton-Ring effects during projection.

(3) The designing of a unit to project the $3\frac{1}{4} \times 4$ in. image with sufficient light intensity to adequately rephotograph in color. This required a light source and optical system producing the maximum efficiency, and required all the heat reducing and cooling elements we could employ, at the same time sacrificing a minimum amount of light and causing a minimum of color distortion.

The light source provided for operation of the stereopticon consists of a Mole-Richardson lamp house designed to the Academy Research Council Process Projection specifications, and has specially condenser elements composed of a primary system consisting of a quartz plano-convex condenser exposed to the arc, and a pyrex double-convex condenser. These in turn are focused on a circulating water-cell system consisting of 2 plano-convex condensers of optical crown glass, which in turn are focused into a field condenser system large enough to fill the $3\frac{1}{4} \times 4$ in. slide.

* Reprinted from Journal of Society of Motion Picture Engineers, August, 1944.

** Director of Transparency Division, Special Photographic Department, Paramount Pictures, Inc., Hollywood.



The combination condenser water-cell is equipped for the introduction of filters such as heat absorbing, color distortion, or neutral density, mounted in a slide that drops into a set position covering the full light ray. They may be added or removed as desired, depending upon the amperage used, whether the slide being used is of non-breakable glass, or whether the color ratio is required to be altered. The cell uses circulating deaerated distilled water to eliminate air bubbles from forming on the inside glass surfaces during operation, and is circulated by pump through a fan-cooled radiator (Fig. 2). The capacity of the cell circulation system is approximately 2 gallons per minute with enclosed liquid volume totaling approximately one-half gallon.

The circulation part of the equipment is a dual system, mounted in a case on the base of the stereopticon and connected by flexible transparent plastic tubing. This mounting, in addition to the cell circulating and cooling system, also contains the circulating water and cooling system for the lamp house, as the positive carbon-mounting unit in the Mole-Richardson lamp house is always kept down to hand-touch temperature, even while operating at 220 amp.

The heat-absorbing glass used in the water-cell when occasion demands is the unusually effective glass developed by Dr. Tillyer, designated as "Phosphate Heat-Absorbing Glass."

Owing to the physical characteristics of this glass, it is most essential that it be utilized in such a manner that the entire area of the screen be subjected to heat of a relatively uniform level. Because of the comparatively high coefficient of thermal expansion, coupled with a low degree of elasticity, lack of uniformity in heat absorption over the area of a piece of this glass is most likely to result in fracturing.

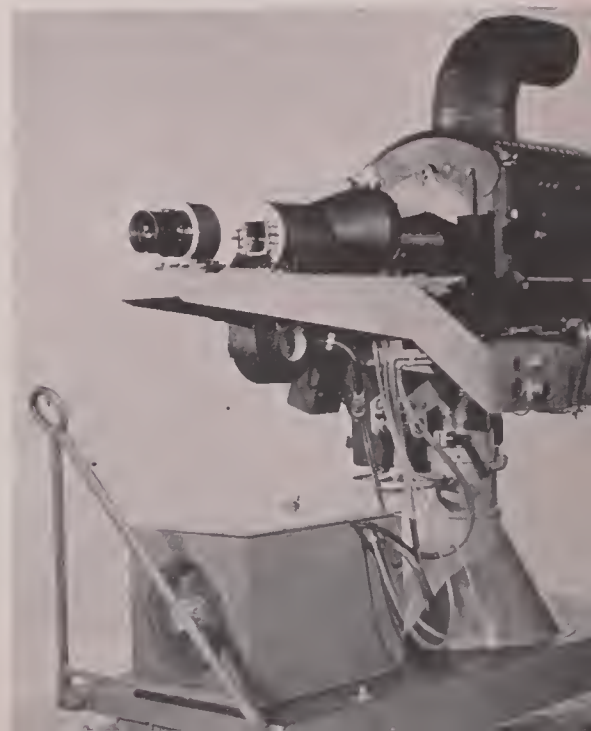
Immediately adjacent to the outside of the water-cell, in the path of light between the cell and field condenser unit, is mounted a heat-absorbing shutter op-

Top left: Fig. 2. Paramount transparency stereopticon cooling unit consisting of radiation units for water-cell and lamp water circulation.

Top right: Fig. 3. Paramount transparency stereopticon, looking down on optical system showing water-cell, heat-resisting experimental glass shutter, and field condensing system for plates.



Right center: Fig. 4. Paramount transparency stereopticon, operating side showing control panel on Mole-Richardson lamp, speaker system, and tachometer.



Bottom right: Fig. 5. Paramount transparency stereopticon, showing right side and electrical hookup.



Top left: Scene of the Paris Grand Opera House, made in 1895 by Francis Doublier.



Top right: Scene in front of the Lumiere Cinematographie factory at Lyons, France, in 1894, and said by Francis Doublier to be the first photographed motion picture to be actually shown on a projected screen. It was photographed by Louis Lumiere.

Below: From a piece of film of the Coronation of Czar Nicholas II, made in Moscow in 1896 by Doublier.



Francis Doublier, Cameraman Fifty Years Ago

By IRVING BROWNING

WHEN I do honor to my good friend Francis Doublier, it is because I respect and appreciate his contribution to the motion picture industry, for at the turn of the nineteenth century, he received a motion picture camera, which he took with him when he toured the European continent and Asia to make a documentary record of people and places to be seen and enjoyed throughout the world.

Imagine yourself a part of this interview, listening to him, for like most Frenchmen, he still retains his accent and it is as pleasant as Charles Boyer's. I wanted to do this story for him, for I have known him for many years and like myself, he is a historian and collector of "Cinemathinajigs" and we enjoy discussing and telling each other about our new accessories. At this time, the motion picture industry is celebrating its fiftieth anniversary and this year too, Francis is celebrating the fiftieth year of his entry into it.

He was born in Lyons, France, on April 11th, 1878, and went to work for Auguste and Louis Lumiere at Lyons in 1894, as a laboratory helper, at the age of sixteen. At that time, the Lumiere brothers, beside being manufacturers of photographic supplies were also experimenting with motion pictures. Until that time all of the experimenters were using the beater movement in both camera and projector and because of its unsteadiness, the Lumiere brothers decided that if they could not develop a more steady movement, they would rather forego making any motion picture equipment at all.

Because of illness, Louis Lumiere, was kept in bed and there he planned and

designed a new movement. Calling for this brother Auguste and his chief engineer Charles Moisson, he related to them his idea. It was immediately put into use and developed to be the one movement which was copied later by many of the camera and projector manufacturers.

Francis, did all the chores in the laboratory. When he started the gag of sending the "new kid out for a pail of sprocket holes had not yet been invented. Several of the Doublier family were already at work at the Lumiere plant. One of his sisters was manager of the manufacturing of photographic plates, another sister was a bookkeeper and a brother was an electrician. His brother was still working there when Francis received a letter from him in 1941. Francis, the youngest, was the last of the family to be employed there.

On December 28th, 1895, he was sent to Paris, as assistant to the projectionist, and there he was present at what was the very first commercial showing of motion pictures on a projected screen. Admissions were 20 cents and the show lasted twenty minutes. The show consisted of fifty-five to sixty foot lengths of film of trains, cavalry, street scenes, etc., with one minute between reels to change film. This show antedated Edison's Kinescope showing which took place in New York City, on April 23rd, 1896. The first public projected film show on the Armat Vitascope projector took place four months later.

In February of 1896, Lumiere sent Doublier to Brussels, Belgium, to show films at the Galleries du Roi. There he rented and set up seats and a 5 x 6



Above: The Lumier camera; inside view showing unexposed film on top and the take-up box, inside. The film was taken up by friction. Note there is no loop which was hardly necessary as the camera carried only from 50 to 60 feet of film.

Top right: Francis Doublier demonstrates how he used his camera as a projector on his tour as both cameraman and projectionist from 1895 to 1900.



Right center: Francis Doublier in his basement museum where he keeps many historical pieces of motion picture equipment, most of which is now extinct except for a few similar pieces in several museums.

foot screen. Then they put up a wall behind which the projector was placed, not for fire prevention, but because they made a solemn promise before they left Lyons that no king or queen or anyone else would ever see the mechanism of the camera-projector. All motion picture apparatus in the early days, was secretly guarded because there was always the danger of a lawsuit because of patent infringements or new competitors. Both being undesirable, they allowed no one to view the equipment. The public always anxious to see what made the picture move, often offered bribes to Doublier.

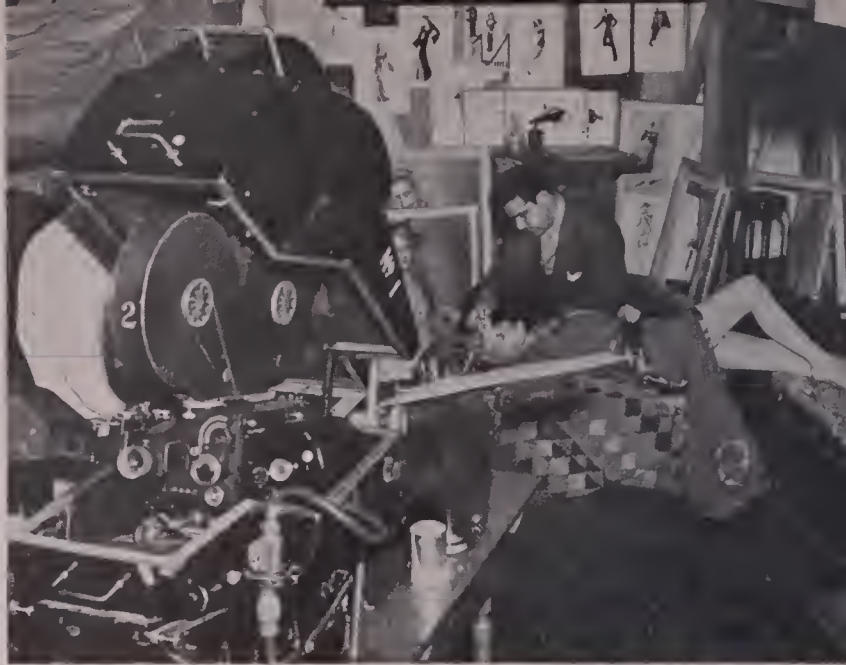
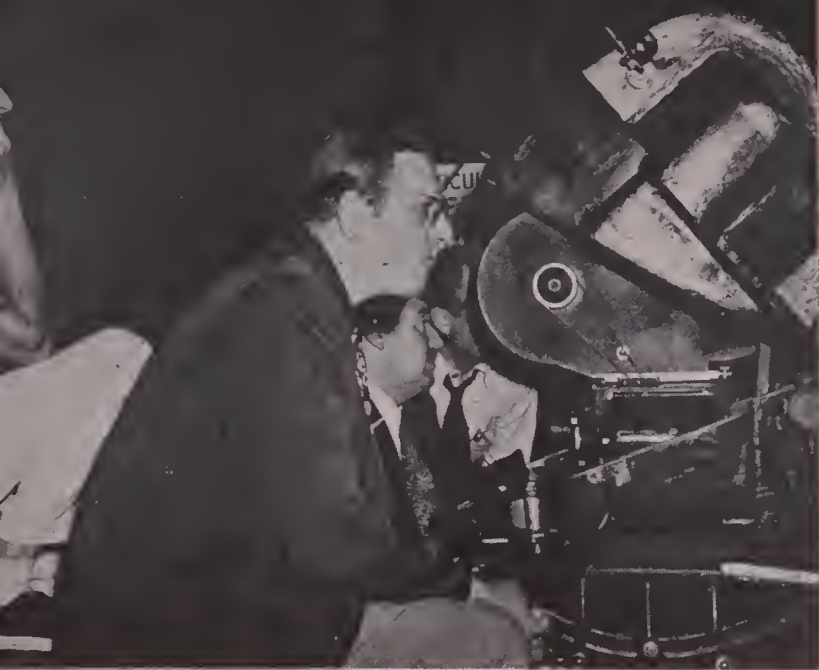
Several weeks later, Lumiere sent a man to replace Francis with instructions for him to leave immediately for Amsterdam, Holland, to open a show at Kalvar Strat. On his arrival he went about as usual renting seats and a store with electricity, to supply the energy for the projection light. He relates the tremendous handicap he encountered with AC current. After running a one minute film the rheostat became red hot. He would hold up the show until the rheostat cooled off, while the patrons sat in the dark. When he was fortunate to rent a store with DC current, a smile beamed across his face as he made comparison between danger and pleasure. If screen credits played as prominent a part then as now, his credits would read, cameraman, projectionist, laboratory technician, editor, actor, director and barker. Besides all this, Francis later became a manufacturer of photographic materials.

(Continued on Page 342)



Bottom: Some of the equipment used for photographing and editing films in 1895. Note the rewind, the film carriage used on the camera when the camera was also used as a projector. The little can was the forerunner of the present 2000-foot reel can, and carried a complete subject.





Top left: Producer Hunt Stromberg checks a scene in "Guest in the House" from behind the camera. Directly to his left is Director of Photography Lee Garmes. Studious character behind him is assistant cameraman.

Top right: A make-up artist applies finishing touches to Marie McDonald's make-up for one of the glamour sequences in "Guest in the House".

Filming a Motion Picture In One Set

By ROBERT JOSEPH

TO the man who photographed the romantic dunes and oases of the Sahara; the colorful, bizarre Bund of Shanghai; the wild and scrubby hinterlands of deepest India; and the triumphant invasion of Poland by the German Wehrmacht—the most exciting film assignment of his career has been the photographing of an Artist's seacoast Maine home.

The photographer in question is Lee Garmes, ASC, who found that North Africa and Poland had their moments—but it was the confining interior of a New England cottage which proved the most challenging and most interesting assignment of his career. Specifically Director of Photography Lee Garmes is referring to Hunt Stromberg's "Guest in the House," a picture which is played, except for one or two minor scenes, inside a house.

"The thought might occur to some people," Garmes explains, "that working within four walls for ten weeks can get pretty dull for the technicians. This doesn't happen to be true. The very fact that we made 'Guest in the House' in substantially what was one set was a challenge to our imaginations and ingenuity. And when this picture emerges on the screen the audience will be gripped by a dramatic, absorbing story, and visually entertained by looking at a house that is as real as any that has ever been photographed for pictures."

The set for "Guest in the house," designed by Nikolai Remisoff, is supposedly the home of a retired sea captain who carried the living quarters of his ships

over into his house. That called for low beamed ceilings—seven feet high—which Garmes characterizes as the lowest ever used in any picture of which he has knowledge. The low ceilings, which served to create an atmosphere of friendliness and home-like realism, also imposed technical limits. This picture, as Garmes states, was not an easy one to photograph, and constituted the most difficult assignment of his career. But the final effect—the recreation of a four-walled home in content as well as spirit—was well worth the effort.

To Garmes and his chief electrician Homer Planette fell the problems of making one set continuously interesting. "Deep Shot," which means that all the characters at different distances from the camera lens were constantly in focus; the appearance of the low beamed ceiling in most shots; the highlights and shadows which were omni-present because of the relatively close quarters in which the story was filmed—all these served to make "Guest in the House" dramatically and visually interesting.

Another problem which faced Garmes was the simple one of the sky-outside beyond the windows. Sharp, clear clouds were gotten by using a so-called "cloud machine," which created interesting cumulus formations, serving to heighten the visual effect.

There were rainstorm problems, lighting problems, and the light house problem, which, from a technical point of view, was probably the most difficult of all. The house which Ralph Bellamy as Douglas Proctor owns faces the sea, a few miles from a Maine lighthouse.

For all of the night shots in the film a light house beacon had to sweep across the house, through its windows at periodic intervals. Because of cutting needs special timing had to be devised so that the revolving beacon would throw its light at split-second periods. This was precision lighting of the highest and most exacting order.

But then brain-twisters in the realm of photography are old stuff to Cinematographer Lee Garmes, who came to films in 1916 when he served as an assistant cameraman in an early Dorothy Gish-Richard Barthelmess film. After graduating from a Denver, Colorado, high school, in 1915 Garmes and the family moved west to the film city.

Garmes' first important film assignment came several years later when he was working with Director Mal St. Clair on an early Adolphe Menjou vehicle, "The Grand Duchess and the Waiter." Garmes devised a new lighting technique—using mazda bulbs instead of the generally used carbons—and through his creative lighting drew great attention to the picture, gave Menjou an important start in his career. By rigging up two bulbs inside of a tomato can for a reflector, and by adding or decreasing the number of these lights Garmes achieved light variations and various light values. The experiment was revolutionary and set a new style for lighting films from that time henceforth.

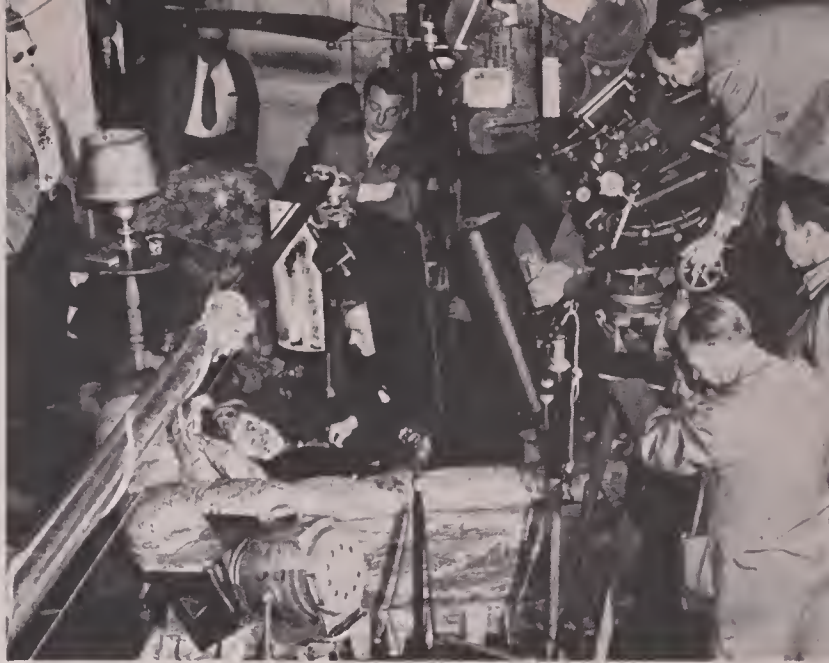
Garmes went abroad to photograph the first screen version of "Garden of Allah," for Rex Ingram in the early twenties. In 1932 Garmes won the coveted Academy Oscar for his work on "Shanghai Express," and he also photographed and co-directed two experimental films with Ben Hecht and Charles MacArthur, "Crime Without Passion" and "The Scoundrel" motion pictures which relied largely on the sense of mood established by Garmes' ingenious lighting.

In Hollywood Garmes served as director of photography for Alexander



Top left: A technician measures distance between Marie McDonald and the camera.

Top right: Cameraman Lee Garmes, looking down through the camera at Anne Baxter and Scott McKay, is working in close quarters making this scene.



Right center: Director and crew plot out future action for performers in pre-production rehearsal. Director Lewis Milestone is at the rear right. People seated in foreground are stand-in live dummies in positions later to be occupied by actors.

Bottom: Director Milestone, left, plots out action. Cameraman Lee Garmes holds camera finder, and sketch artist Les Thomas, in front of Garmes, studies the scene, during pre-production rehearsals of "Guest in the House".



Korda on "Lydia" and "Jungle Book," and more recently photographed "None Shall Escape," story of the Nazi invasion of Poland, directed by Andre de Toth, a film craftsman whom Garmes considers one of Hollywood's most talented newcomers, now under contract to Stromberg. Here, too, was a picture which depended to a large degree on effect achieved through imaginative lighting.

His present assignment, "Guest in the House," which Garmes calls the most exacting and difficult of his career, has also been the most exciting, chiefly a result of a successful experiment in pre-production planning, the harmonious operations of Director Lewis Milestone, Art Director Nikolai Remisoff and the photographer himself. Together the three planned every phase of the film, working as a unit.

"I'm in a corner—literally and figuratively," Garmes states about his newest picture, "and that's when I do my best work."

Under long-term contract to Hunt Stromberg, Garmes will also act as director of photography on "Dishonored Lady," his next picture.





Last month the 18th AAF Base Unit, Culver City, Calif., formerly the First Motion Picture Unit, conducted its first photographic contest, open only to enlisted men. Judges for the contest were Clarence Bull, MGM; Ray Jones, Universal, and John LeRoy Johnstone, International Pictures.

The upper picture on this page, titled "Horses", was judged BEST OF SHOW. It was made by Pfc. Herbert P. Bond, whose home is at 219 Brighton Avenue, Burbank, Calif.



The bottom picture, titled "Gliders", won first prize in the miscellaneous division. It also was photographed by Pfc. Bond, who is in the special effects department of the Base Unit.



"Survival"

By E. S. ROBERTS

“OVER far-flung fronts, the training and fighting personnel of the Royal Canadian Air Force meet the hazards of weather and enemy action. A forced landing may result through no fault of aircrew. A successful outcome depends on the adaptability, initiative and ingenuity of aircrew. *Only the fit survive.*”

These are the commentator's words that set the stage for the lessons being taught airmen in a new motion picture "Survival." Produced by Associated Screen Studios for the medical branch of the RCAF, the picture is six reels in length, in full color.

For those who have never "roughed it" in the bush, the motion picture will be particularly valuable, by bringing alive situations set forth in the RCAF text book on "Land and Sea Emergencies." Even for the more or less experienced woodsmen there are useful and perhaps surprising tips illustrated.

"Survival" was produced in cooperation with the National Research Council of Canada, and an RCAF committee on flying clothing and emergency equipment. The picture demonstrates many of this war's new developments in life-saving equipment—special food and medical kits, articles of clothing and signalling devices. Above all this, the airman is taught to be resourceful in using materials that may be ready at hand from the crashed aircraft, and to seek food that nature provides.

The need for sane and ordered procedure in an emergency is stressed in the film, and morale will be strengthened for any airman forced down in strange territory when he remembers the promise the picture makes of diligent rescue efforts by those watchers who follow his flights.

Production of the film was supervised

by S/L Morley Whillans of the medical branch, RCAF. Earl Clark of Associated Screen Studios was in charge of camera work, while F/L Gordon Alguire and WO1 Roy Longard were technical advisors.

During nine months of production, three separate aircrews were employed, and a large number of RCAF personnel, ground, air and marine, were at one time or another employed at various locations to give a realistic portrayal of problems of survival.

It might be supposed that with Air Force meteorological service at their beck and call, shooting schedules could be neatly arranged to obtain the best possible conditions for shooting exterior Kodachrome. The different occasions when nature balked the "met" boys set off in sharp relief the average high quality of their prognostications, by which schedules were set.

Cape Breton Island is surrounded on three sides by the Atlantic Ocean. Some queer weather is kicked around there, and during officially-recorded 18 hours of November sunlight, 2000 feet of film had to be exposed. The production unit had been waiting for ten days, when the meteorological section promised positive sunlight. The photographic crash boat put out to sea, the Navy sent out collaborating craft, two aircraft were readied. For five hours 32 persons and precious equipment stood ready for the skies to clear.—Nothing happened.—At noon the "met" section was contacted to check on their promise of sunlight. All they could report was that 200 miles away there wasn't a cloud in the sky, a high pressure area extended westward over Canada to Winnipeg; by all the rules Cape Breton should be clear—but no sunlight appeared that day!

For the winter sequences, considerable

Above, left: Back to civilization, after living the lessons of "Survival," come the production crew and members of the Royal Canadian Air Force. Left to right: AC F. C. Jameson, AC G. A. Braniff, F/L G. Alguire, Earl Clark, director-cameraman; WO R. E. Longard, Frank Harris, Associated Screen News, and AC L. J. Carey.

Right: Knowing methods of signalling to rescuing aircraft under all manner of conditions may save the life of a stranded airman. Planting evergreens in the snow to form a "V" means medical emergency.

study was given the selection of a location that would be at once picturesque, and could be expected to retain more or less constant background settings throughout a period long enough to complete all the scenes required. Mont Tremblant was chosen. For as long as local residents could remember, the mountain had retained its formidable winter dress until late spring. Perpetual condensation in average temperature of 20 below zero at the summit builds two-foot blankets of white on even the smallest of twigs. Snow reaches a depth of 15 feet underfoot. A veritable fairyland setting was the joy of the camera crew to the time that one half the film on winter sequences was in the can. But camera operators and trouble seem to have a fascinating attraction one for the other. One horrible morning the crew crawled out of their sleeping bags to find all trees denuded of their frosty coats. The whole expedition had to be called off until the thaw ended, cold returned and had a chance to rebuild the hoary coats of white.

When the winter sequences were at last complete, the crew entrained for Montreal, laden with packs, snowshoes and beards. "At last! No more snow water, no more spruce beds, no more retakes! Civilization again, food and friends. Happy day, our troubles are over." Just before Montreal was reached, the train jumped the rails, the backwoodsmen returned to character, packed their equipment on their backs for the last half mile to the station!

Actually, the film "Survival" demonstrates three varying circumstances under which Canadian flyers in training

(Continued on Page 356)

THROUGH the EDITOR'S FINDER

WE tip our editorial hat to the Hollywood office of J. E. Brulatour, Inc., E. O. Blackburn, Vice-President and General Manager, and all the members of the Brulatour staff for the service they are offering the families and friends of cameramen and photographic technicians in the Armed Forces, announced elsewhere in this magazine.

We all know that our boys in the Armed Forces, especially those on foreign soil, will be looking forward to receiving Christmas presents from home come next Christmas day. We all know that those gifts must be very securely and properly wrapped and addressed for mailing, so they will arrive in good condition. Securing the proper cardboard and wrapping paper, and following the postal rules to the letter is quite a task.

The Brulatour organization offers to do all the wrapping and addressing, and mailing free. All one has to do is take the gifts to the Brulatour Hollywood office and give the necessary information as to where they are to go, value and name and address of the sender. The Brulatour office does the rest—even to furnishing the postage free. AND—best thing of all—The name of J. E. Brulatour will NOT appear either inside or outside the package. This proves to this writer that the service is not an advertising stunt, but is a real service sincerely rendered by every man in the Brulatour organization. We happen to know that the Brulatour staff has volunteered to remain at the office every night until October 15th (deadline for sending gifts overseas) on their OWN TIME to wrap these Christmas gifts. That's SERVICE that deserves commendation.

LAST month this writer touched upon the subject of giving cameramen more prominent screen credit, especially on important motion pictures.

We suggest it again, and will continue to suggest it until some wise production head sees the light and recognizes the importance of the cameraman in the making of motion pictures.

The Academy of Motion Picture Arts and Sciences honors the cameraman each year when giving it famous Academy Awards of Merit. The Academy presents the same sized "Oscar" to the cameraman as it give to the best actor and for the most outstanding motion picture. If the Academy recognizes the worth of the cameraman, it would seem logical that the film producing companies would do likewise, and instead of burying the cameraman's name in a maze of 15 to 20 other individuals who perform minor duties, would give the cameraman a separate credit title similar to the director and the writer. After all, if it were not for the cameraman there would be no picture on the screen.

WITH the end of the European part of the war approaching closer and closer, men in the Armed Forces are beginning to wonder what is going to happen when they come back home. Will they get their old jobs back, or will they have to walk the streets looking for new ones that do not exist? In Hollywood some are wondering what will happen to the cameramen when they come back from the war.

"Will the picture industry repeat what happened after the last war, or will they give the returning cameramen back their jobs?" one important Director of Photography asked me the other day.

Then he told me of his experience after he returned from two years of war against Germany.

"I went in to see a producer about photographing a picture he was about to make," said the cameraman. The producer said, 'Well, what was your last picture credit?' "I explained to him that I hadn't made a picture in two years because I was over seas in the army. That producer told me he was afraid to take a chance on me because I probably had forgotten a lot of lighting technique in two years. So it went with other producers. Finally, although I was a first cameraman, I had to get a job as an assistant and start up the ladder again. Is that what is going to happen this time? If it is, then somebody should do something about it."

It is a problem that must be solved, and the only way to solve it is to give the returning cameramen their jobs back. They have given up their high paying jobs to enter the service—many of them away over draft age. Practically everyone of them volunteered. A number of them have given their lives. When they return they should return to those jobs. If they don't, then they have fought a war in vain.

The union says it will revoke the wartime permits issued to men who have replaced these combat cameramen. Will the production officials be willing to put them back on the cameras, or will they ask them about their last picture credits?

THE Martin Drug Stores of Tucson, Arizona, are compiling a unique record as part of their war effort. Since June 30, 1941, the Martin photographic department has "shot" all inductees selected by both local draft boards. The "shooting" has taken place at the Auditorium of the Morgan McDermott Post of the American Legion in Tucson as the selectees are sworn in, and has been done with a 16mm. movie camera on color film. Each film has attached to it a 16mm. scroll title showing an accurate list of the names of all selectees who have been "shot" on that particular film.

A. P. Martin, owner of the Martin Drug chain of 7 stores in Tucson and Casa Grande, Arizona, conceived the idea

and the Martin Drug Co. is financing the entire project. Mr. Martin, a veteran of the first World War and a member of one of the local draft boards at the present time, believes that a visual record of the thousands of selectees from Pima County will be of great interest to these boys and their families in years to come. The films, of course, will be available free of charge.

The inductee films are filed on 400 foot reels, with four to six induction ceremonies to each reel, depending on the number of inductees to each ceremony. Some 30 reels have been accumulated and carefully indexed and filed. The films have already been shown to interested families of selectees and to some of the boys in service who have been home on leave. A grand idea, Mr. Martin, we congratulate you!

HERE'S a friendly tip for some advertising agency who has a client looking for a transcribed radio program that is really different.

The other evening this writer had the pleasure, and we do mean pleasure, of listening to the first of a proposed 26 15-minute episodes of a radio program which is called "This Is Television," written by Robert L. Douglass and produced and directed by Michel Hamaty. At its conclusion we asked that the recording be played again.

The program gives an amazing idea of what will be happening in American homes when television is actually perfected and brings the world right into the homes of Mr. and Mrs. United States. One sequence in the first episode depicts an old lady who has been waiting forty years to be able to go to California and watch the return of the swallows in the Spring to Capistrano. And now she sits in her rocking chair in her own living room and both sees and hears the birds returning. Douglass has done a priceless job of dialogue writing.

Tying each sequence together is the soft, soothing, dreamy voice of "Television" delivering a commentary of a quality seldom equalled on air programs this writer has heard. Heading a very competent cast with beautifully trained voices is film actress Early Cantrell in the role of "Television." Doris Day, noted stage actress, and David LeClaire, well known on stage and radio, play two of the most important roles.

As we said at the start, this is a program that is really different, and one which holds its listeners. It should be right down the alley for any company whose product is connected in any way with radio or television—or anything else, for that matter. This writer is so impressed with it that he happily gives the information that anyone interested in hearing a recording should write to Michel Hamaty Productions, 7356 Melrose Avenue, Hollywood, Calif.

A Christmas Thought

and Service
for OUR CAMERAMEN
who are serving
Our Country——

To all families and friends
who are sending Gifts and
Christmas remembrances—NOW—

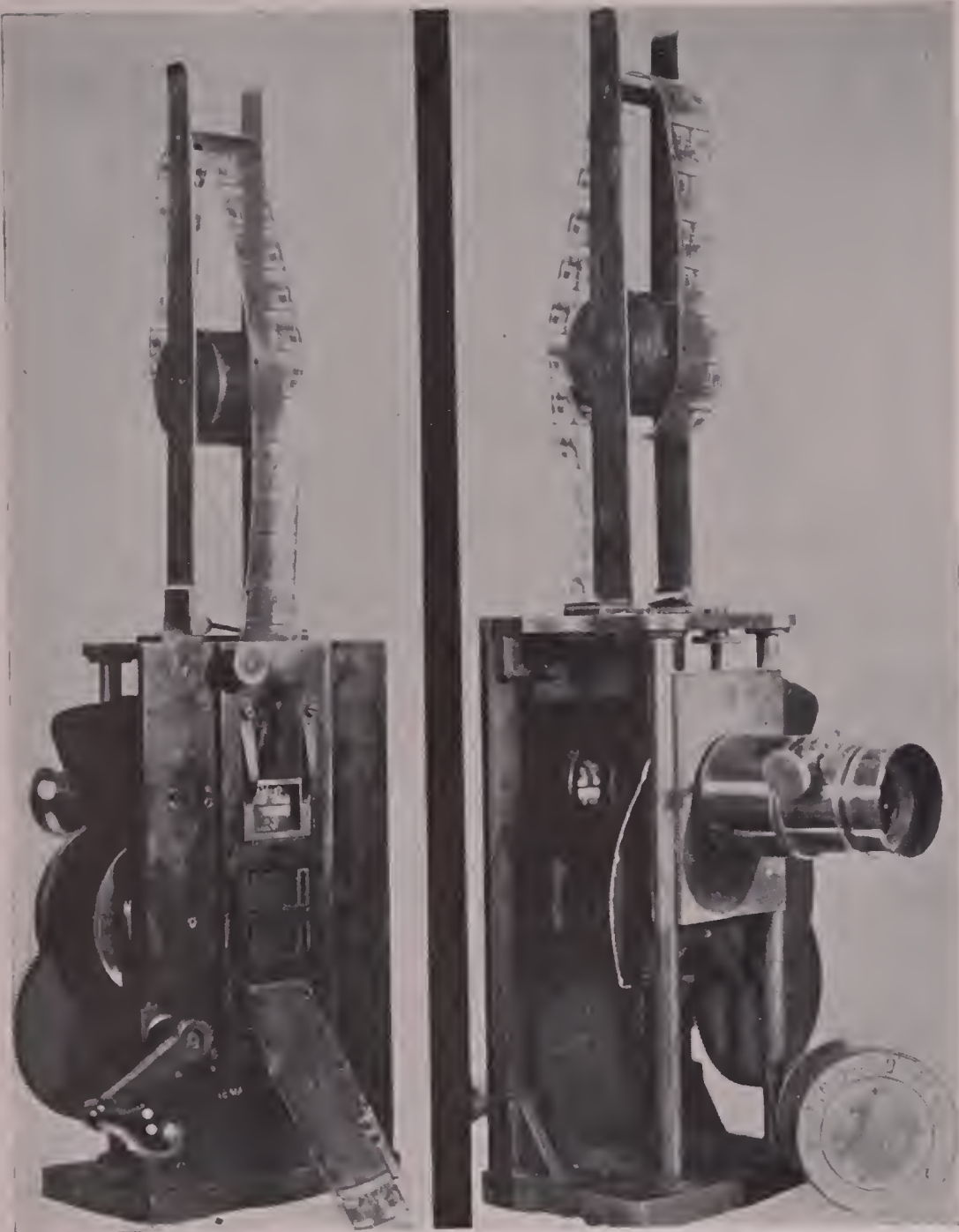
Bring them to Brulatour
(with your card or greeting)

We'll Wrap Them
Pack Them Carefully
and send them on their way
*under your name and address
as the sender ——*

Bring in Your Gift
His Name and Address
We'll Do the Rest
C h e e r f u l l y ——

J. E. BRULATOUR, Inc.
6700 SANTA MONICA BLVD.
— HOLLYWOOD —

HILLSIDE-6131



Top left: The first all-metal motion picture projector, made by the Lumiere Cinematographie at Lyons, France. The movement is the same as that in the camera. Note that there is no loop. The film, usually of from 50 to 60 feet in length, ran from above into the box below. Notice, too, the perforations in film.

Bottom: Francis Doublier and the camera with which he started his cinematographic career fifty years ago.

Francis Doublier

(Continued from Page 335)

Early audiences became panicky and fell backwards when the cavalry charged forward; some of them getting up and running out, never to come back again. It was necessary for the manager to come forward before each show and assure those seeing a moving picture for the first time, that the people, horses and trains in the film, never leave the screen and pleaded with the audience to stay in their seats until the show was over. This they encountered in every country they visited.

Soon after Francis received notice he was to go on his most important mission, that of photographing a great event in European history, the Coronation of Czar Nicholas II on May 28, 1896. Equipped with two cameras and projection equipment, he and a manager arrived in Moscow and set up an auditorium. Then he went out to make arrangements for photographing the Coronation. It was announced that two days after the Coronation the Czar and Czarina would meet their subjects and souvenirs would be distributed. This event was to take place at Hodynsky Plain, northeast of Moscow. One half million subjects crowded the Plain, all anxious to obtain one of the Czar's souvenirs. Doublier, intent on getting a souvenir for himself, set up his camera on the roof of a two story building and leaving his assistant with it, went down after the souvenirs, a scarf and a cup with portraits of both the Czar and Czarina with the double eagle. Immediately after his return the crowd began a mad rush for the souvenirs. A tide of men and women surged toward the building, pressed through the ropes and into the street and onto the temporary flooring in front of the house where the camera was set up. Ends of timber tilted up like the furious jaws of an alligator and crying Russians went down into the excavation.

Across the plains, this great crowd moved forward, the stronger forging ahead of the weaker, many were trampled to death. This happy occasion became one of the greatest tragedies of its time, for when the souvenirs were finally exhausted, it was said that there were only about 1000, they found six thousand bodies trampled and crushed. The police caught up with Francis and his assistant after it was over, and

(Continued on Page 354)

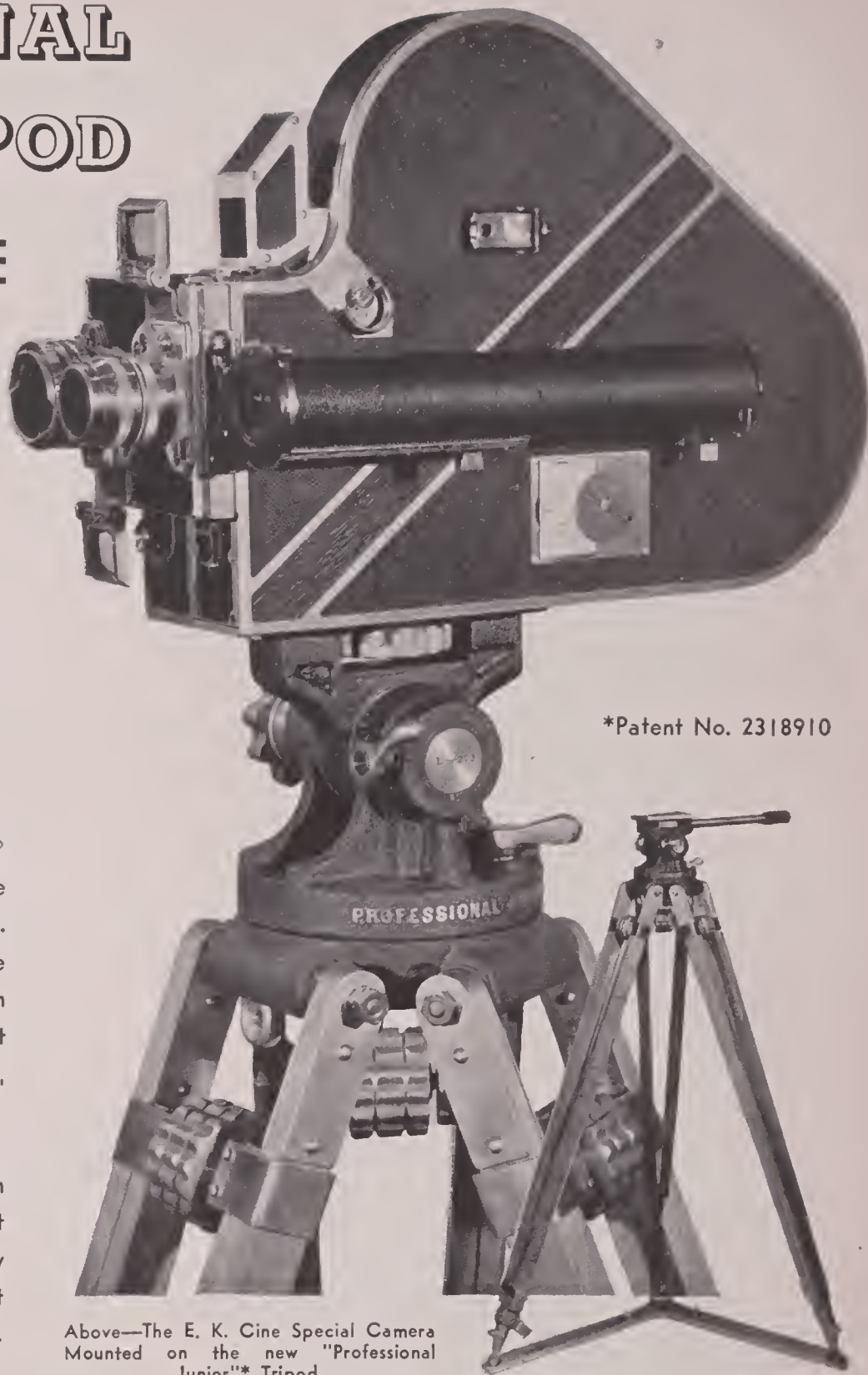


"PROFESSIONAL JUNIOR"* TRIPOD

WITH REMOVABLE HEAD

The friction type head gives super-smooth 360° pan and 80° tilt action. It is removable, can be easily mounted on our "Hi-Hat" low-base adaptor. The large pin and trunnion assures long, dependable service. A "T" level is attached. The top-plate can be set for 16mm. E. K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

The tripod base is sturdy. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. Complete tripod weighs 14 lbs. Low height, at normal leg spread, 42". Extended height 72". All workmanship and materials are the finest. Also available are heavy fibre carrying cases.



*Patent No. 2318910

Above—The E. K. Cine Special Camera Mounted on the new "Professional Junior"* Tripod.

***Tripod Head Unconditionally Guaranteed
5 Years. Write for Descriptive Literature!***

"Professional Junior"* Tripods, Developing Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and Other Government Agencies—also by many leading newsreel companies and 16mm and 35mm motion picture producers.



Above—Collapsible and adjustable telescoping metal triangle. Extends from 16½" to 26½". Has wing locking nuts for adjusting leg spread and stud holes for inserting points of tripod feet. Triangles prevent damage, insure cameramen that their equipment remains in correct position and will not slip on or mar any type of surface.

Left—35mm Eyemo with motor and 400 ft. magazines mounted on "Professional Jr."

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY



The new Fairchild X-ray camera is shown at left.

Fairchild Announces New Type X-Ray Camera

AN ENTIRELY new type X-ray camera, incorporating many unusual features, has been announced by Fairchild Camera & Instrument Corporation of New York. It was shown for the first time at a combined annual meeting of the Radiological Society of North America and the American Roentgen Ray Society, in Chicago September 24-29.

Fairchild has designed and is now producing this photo-fluorographic camera for installation in X-ray equipment of several manufacturers, who had expressed their desire for a better instrument to provide record negatives of images appearing on the fluoroscopic screen. It is expected that the camera will be marketed on a world-wide basis.

Important features of this fully-automatic camera are that it takes images 2½ inches wide by 2½ or 3 inches, dependent upon the type of equipment in which it is installed, on 70mm roll film; it has an exceptionally fast lens, f/1.5, especially built for Fairchild by the Bausch & Lomb optical works; there is a removable film magazine; a pressure plate of the type used in some of the Fairchild aerial cameras holds the film flat in the focal plane during exposure; and, a film feed signal informs the user the camera is in operation, and provides for stopping the camera in case the film is not moving. There is no shutter; the exposure is made for the length of time the X-ray is turned on.

Prior to the introduction of this Fairchild model X-ray cameras on the market generally were of the 35mm roll film type or the 4"x5" cut film variety. Advan-

tages cited for this, the first 70mm X-ray camera, are many. For example, recognized medical authorities have informed the Fairchild company that in viewing 35mm pictures through magnifiers, trained readers checking for tuberculosis miss as many as 10 per cent of the positive cases; that inexperienced readers have missed up to 50 per cent of the positives.

In the Fairchild 70mm camera it is expected that in the majority of cases the negatives can be read accurately without benefit of magnification.

Against the 4"x5" camera, the Fairchild unit shows great savings in time and costs. As many as 400 negatives can be had from one standard 100-foot roll of films; an extra operator, necessary in taking photos with the 4"x5", is eliminated; one person can do the quantity viewing of the 70mm negatives on their roll, while three persons are required for speedy reading of the 4"x5" cut film negatives; and, film costs are greatly reduced.

The new Fairchild camera comes at a time when the U. S. Public Health Service is preparing for the biggest offensive yet undertaken against tuberculosis. There are at least 1,500,000 consumptives in the United States, and though the tuberculosis death rate has been reduced, it still kills more people during the 15-35 year range than any other disease.

The tuberculosis death rate in 1944 turned upward for the first time in decades, and Congress promptly passed a bill authorizing a new tuberculosis control division of the Public Health Service. It is in charge of Dr. Herman Ertre-svaag Hilleboe, the Navy's chief T.B.

consultant, whose biggest weapon in the fight will be the mobile X-ray machine, with which he hopes eventually to photograph every chest in the country. The idea is to catch incipient cases, which can be cured without drugs, and at the same time round up the many persons who though they are in the advanced stages don't know they've been hit by tuberculosis at all.

Anso's New Color Sheet Film Now Available to the Public

Anso's new Color Film, designed for processing by the user, is being released to amateur and professional photographers throughout the country for the first time since it was put in production for the exclusive use of the armed forces and war industries.

Company officials at the same time announced that special Developing Outfits for individual processing of the film also are being placed on the market.

Only film in sheet sizes will be available for the present.

Anso Color Reversible Film was given its first public showing in New York City this summer and a limited supply was released at that time for distribution in the metropolitan area.

When the film was first introduced publicly, Anso officials were unable to predict when it would be possible to release the film on a national scale. However, production schedules have been arranged which make it possible to place this new type of color film in the hands of Anso dealers from coast to coast.

No priority is needed to obtain Anso Color Film now although the military and essential industries will continue to have first call on the volume being produced.

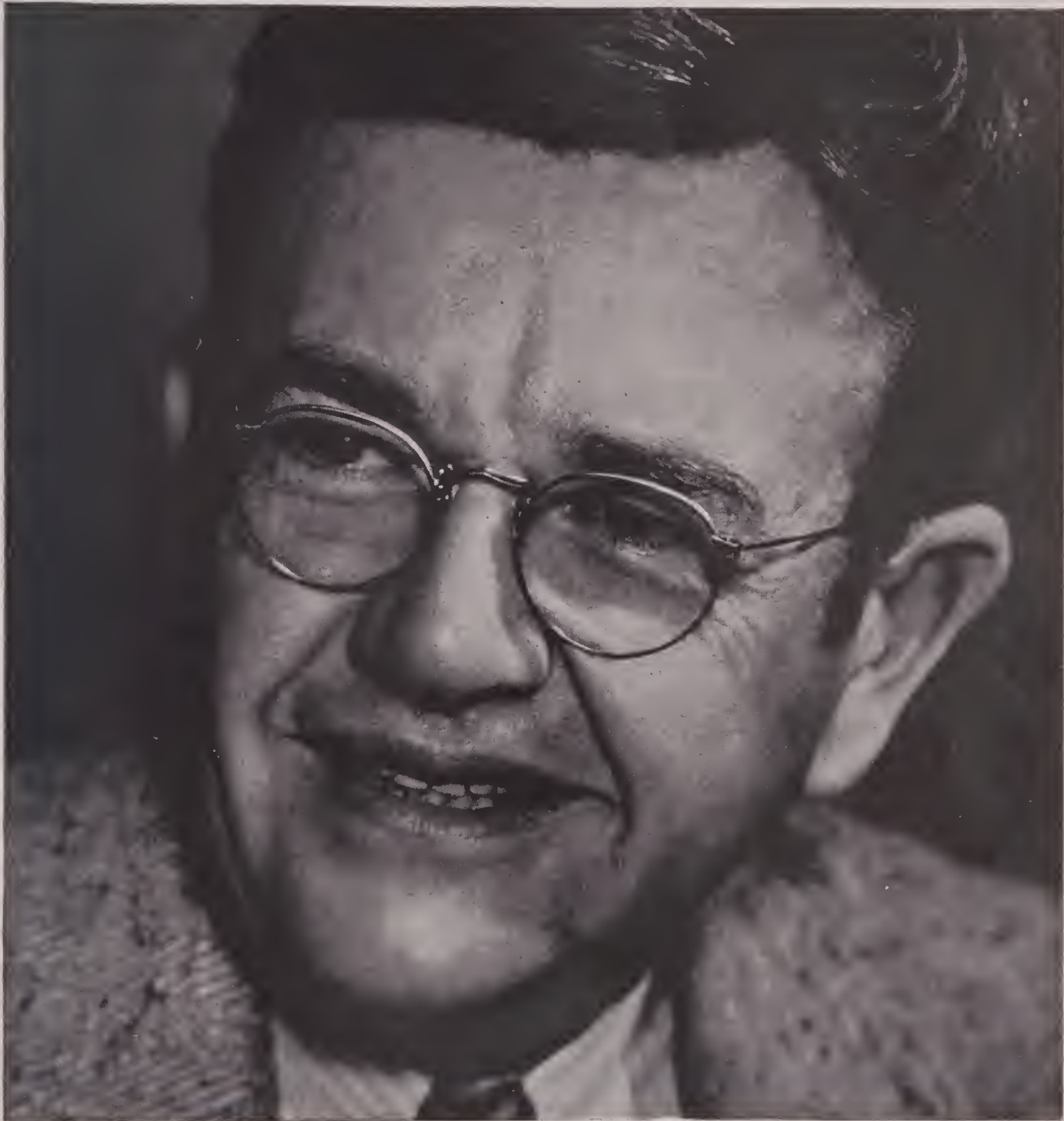
Advancement of Anso Color Reversible Film from its laboratory to market stages was aided by the photographic demands of World War II.

Requirements of Army Air Forces, as well as other branches of the armed forces, added impetus to the perfection of Anso Color Film and its unique advantage of "on-the-spot" processing without the delays entailed by returning it to the manufacturer.

The new film's practicability also was demonstrated when military officials and manufacturers of secret war devices found it expedient for national security to make full-color transparencies within their own headquarters.

For those who do not wish to do their own processing, such service is available through Anso dealers. Special facilities have been installed in the Anso Color Laboratory to maintain rapid service to the dealers.

"Perfect cinematography and modern arcs are inseparable." Karl Struss, A.S.C.



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AMONG THE MOVIE CLUBS

Syracuse Elects

Newly elected officers of the Syracuse Movie Makers Association for the coming year are: Roy E. Felton, President; Archibald D. Rodger, Vice-President; L. Elmo Golly, Secretary; Lisle Conway, Corresponding Secretary; Neadford S. Olney, Treasurer; Roy Pannemborg, Sound Technician. Elected to the Board of Directors were: Maurice Schwartzberg, Earl Abbott and Paul Hyland.

The club has just announced that it has acquired new permanent quarters at 446 James Street, across the street from the Syracuse Museum of Fine Arts. From now on the club rooms and facilities are available seven days a week to all members. These facilities include a darkroom and processing laboratory equipped either for reversal or negative-positive processing and printing; an auditorium equipped with sound stage, projection booth, sound tables, permanent beaded glass six-foot screen and a workshop.

San Francisco Club

The Cinema Club of San Francisco held its September meeting on Sept. 19, at the Women's City Club.

Feature of the meeting was the screening of "This Is Alaska," an unusual film photographed by Mrs. S. B. Bruckner, wife of Major General Buckner, commander of our troops in Alaska prior to Pearl Harbor. Mrs. Buckner took advantage of her stay in Alaska to film the scenic beauties of the territory and its varied activities, even a walrus hunt. Her film is of such excellence that universities have given it special showings.

Some of the club's zoo films were re-shown, and a member of the staff of the San Francisco Zoo was on hand and outlined a number of animal stunts he will stage for the club members when they next visit the Zoo.

Utah Cine Arts Club

Feature of the September meeting of the Utah Cine Arts Club was an illustrated lecture on composition by Dr. C. E. Barrett, President of the Club.

The remainder of the evening was devoted to the screening of "South of the Border," and the films made by club members at the annual club picnic held on August 20.

Minneapolis Club

The 1944-45 season of the Minneapolis Cine Club got under way with its September meeting in the Brunswick Room of the Andrews Hotel. A program committee consisting of Bill Block, Chairman; Bob Kleinman, Al Lindemann, Fred Grabow, Falconer Thomas and Allan Pahr was appointed to plan the programs for the year's meetings.

L. A. 8mm Club

Five films made up the screen program at the September meeting of the Los Angeles 8mm. Club, held at the Bell & Howell Auditorium, Hollywood.

The films were: "Florida Vacation," Kodachrome by Mr. Hornaday; "Moods and Memories," Kodachrome by L. B. Reed; "Caught in the Act," a kid picture by Mr. Clemmens; and a War Department film depicting the part industry is playing in the war.

Fred Evans, Claude W. A. Cadarette and John E. Walter were named by President Milton R. Armstrong as nominating committee for the forthcoming annual election of officers in November.

Saint Louis Club

Three films were screened at the September meeting of the Amateur Motion Picture Club of Saint Louis. They were: "Eastern Coastline," a very interesting picture made by George Hysore, covering the eastern coastline from Delaware to Nova Scotia; "Your Must See Spots at Miami," in Kodachrome by Ed Gelzheuser, and "Social Life," a film of the club's Second Annual Picnic, made by Club President Paul Schultz.

Southern Cinema Club

Members of the Southern Cinema Club combined fishing, eating and filming on Sunday, September 24, when they staged a fish fry at the Rainbow Trout Farm, Azusa, California. They caught the trout; they fried them; they ate them; and they made motion pictures of the entire proceedings.



SOLITUDE

La Casa Movie Club

The La Casa Movie Club of Alhambra, California, is rapidly becoming one of the largest and fastest growing amateur clubs in America. More than 200 were in attendance at the September meeting, and 225 were on hand for the August meeting.

Three films were screened at the September meeting. They were: "The Magic Carpet," filmed by Leon C. Sprague of the Southern Cinema Club; "Flowers," by Dr. G. B. Baird; and Eastman Kodak's beautiful documentary film in color, "Eighteenth Century Life in Williamsburg, Virginia."

Philadelphia Cinema Club

Four outstanding films featured the September meeting of the Philadelphia Cinema Club, which marked the start of the club's 1944-45 season.

Films shown were: "Cavalcade of Color," in Kodachrome; "The Dutch Tradition," a black-and-white film depicting Holland in an entertaining manner; "A Man, A Dog, and a Gun," and "18th Century Life in Williamsburg, Virginia." All films had sound.

M.M.P.C.

The first meeting of the current season of the Metropolitan Motion Picture Club was held at the Hotel Capitol, New York City, on September 28.

Films shown were "Rainbow Fantasy" by Charles C. Hammack, and "Hudson Valley Apples," an interesting Kodachrome film by James N. Whitaker. Also shown was an unedited and untitled film of the club outing at Clove Lakes Park, Staten Island, made by Robert W. Ebeling.

Washington Society

A varied program was presented at the September meeting of the Washington, D. C., Society of Amateur Cinematographers.

Wilber F. Comings presented a novel method of making personal home movie titles. There was a newsreel, vacation film, and a picture made with the new Ansco-Color movie film was presented by J. Donald Sutherland.

Philadelphia 8-16

September meeting of the 8-16 Movie Club of Philadelphia had a well balanced program. On the screen were shown an OWI film, a sound cartoon and a picture of the club's picnic. A special feature was the projection of Kodachrome Slides made by members. There was also an exhibition of members' gadgets.



Official U. S. Navy Photograph

the war seems far
away tonight . . .

SUPPOSE you were a young fighter in the South Pacific. At your age, you'd be spending a lot of time with a girl—if you were back home. But home is months and miles behind you—and you're sick to death of men and uniforms wherever you look . . .

And then a "live" show planes in—with girls—girls who've come all the way from home to smile at you, to talk to you, to sing and dance for you . . .

They're grand medicine for homesick

boys, these lovely girls of screen and radio . . . so are the famous comedians, the vaudevillians, the dramatic actors, the dance bands, the concert stars . . .

Like all the rest of these entertainment folk, the movie men and women often give up a good deal to go. They travel and work themselves ragged. Many are often in danger. They are serving gallantly, and with great satisfaction . . . making one of the important contributions of the movies at war.

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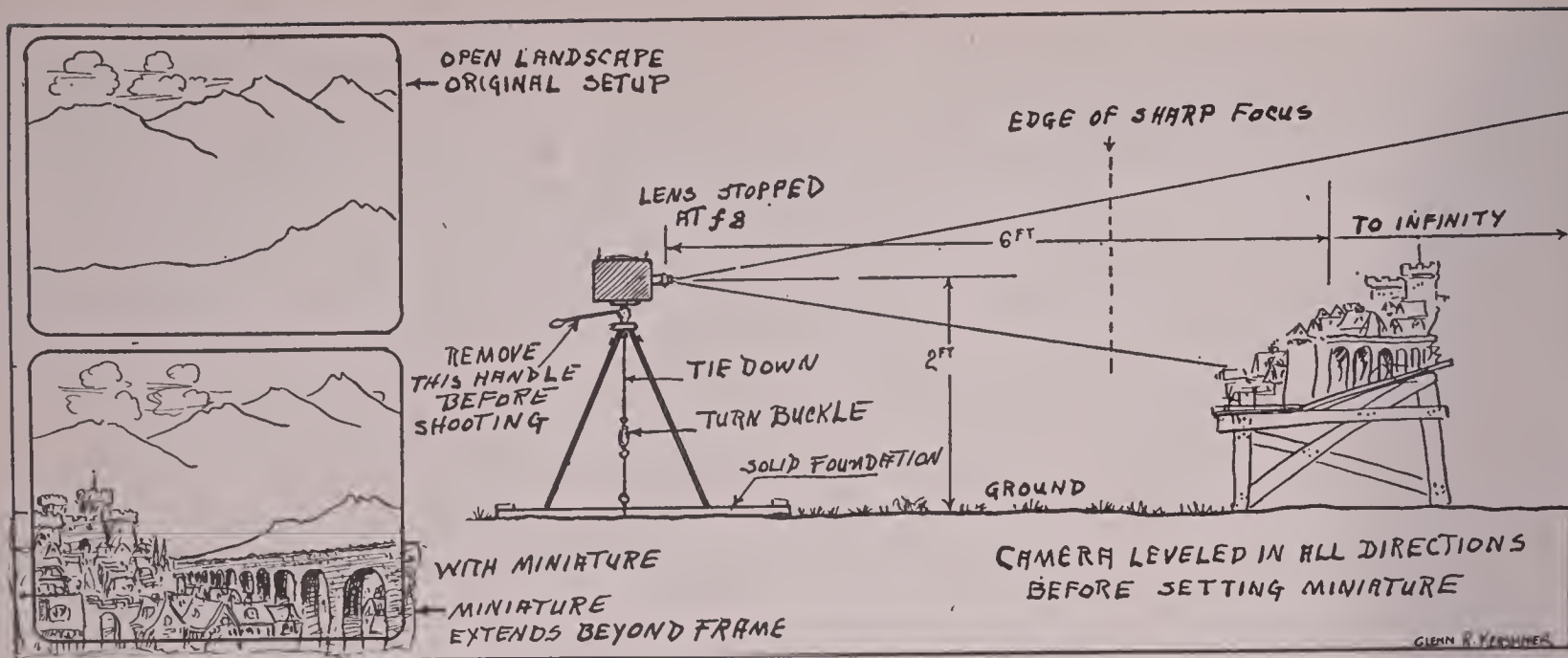
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HOLLYWOOD

One of a series of
advertisements by
KODAK testifying to
the achievements of
the movies at war





Movie Tricks for Amateurs

By Glenn R. Kershner, A.S.C.

A LITTLE blue box sat among the other camera cases at the edge of the set. Painted on the top was the name of the cameraman, and under his name in big letters was the word TRICKS.

Out of this magic box of instruments and gadgets the cameraman has done almost unbelievable tricks in movie making. And speaking of tricks, the most fascinating of all is the use of miniatures.

Miniatures are replicas of practically anything you wish to name. Mountains, hills, oceans, waterfalls, cities, towns—anything that the script calls for. They are all built infinitely smaller than the original, but are built absolutely to scale.

There are two types of miniatures—stationary and moving. The stationary type includes houses, church steeples, cities, mountains, etc. The moving type includes tumbling rocks, fire, water, trains with smoke belching from the smoke stacks, ships, etc. It is impractical for us to discuss the moving type of miniatures here, because the 16mm. camera cannot be operated at sufficiently high speed, which is from two to fifteen times faster than normal, to slow the action of the miniature down to normal on the projection screen. So, we will dwell on the non-moving type of miniature in this article, and we will bet that once you start working with miniatures you will find it one of the most enjoyable experiences of your entire amateur movie work. We will bet that you will spend many an evening at your work bench turning out miniatures which will enable you to make films such as you have only dreamed of in the past.

Upper Table is "A", bottom is "B".

Anyone who can use a knife, chisel, saw and hammer can make miniatures. Sometimes we make them of cardboard;

sometimes of wood. You can do the same, and if you want duplicates, you simply make a plaster of paris mold, and cast as many as you wish. However, before you start making your miniatures there are a number of things you must have figured out.

Let's suppose you have discovered a very attractive bit of landscape with

(Continued on Page 353)

HYPERFOCAL DISTANCES

The hyperfocal distance is the minimum distance at which critical sharpness is obtained with a given diaphragm opening when the lens is focused at infinity. All objects at the hyperfocal distance and beyond will be in focus.

The hyperfocal distances for telephoto lenses are calculated for very critical work. For ordinary purposes it will be satisfactory to take half the distance given.

Focal Length of lens	F 1.5	F 1.8	F 2.7	F 3.3	F 3.5	F 4	F 4.5	F 5.5	F 6.3	F 8	F 11	F 16	F 22	F 32
12½ mm.	.....	.....	8'	.....	6'	.....	4½'	3½'	.....	2½'	2'	1½'	.....	.....
15 mm.	9½'	8'	5'	4½'	4'	3½'	3'	2½'	2'	1½'	.....	.....	.....	.....
1"	27'	22'	15'	12'	11½'	10'	9'	7'	6'	5'	4'	2½'	.....	.....
1½"	.....	.....	.....	.....	22½'	.....	18'	15'	.....	10'	7'	5'	.....	.....
2"	130'	120'	75'	60'	55'	50'	45'	36'	32'	25'	18'	12'	9'	6'
3"	.....	.....	130'	114'	107'	94'	83'	68'	60'	47'	34'	23'	17'	12'
4"	.....	.....	.....	.....	190'	167'	148'	121'	106'	83'	61'	42'	30'	21'
6"	.....	.....	.....	.....	.....	375'	333'	273'	238'	188'	136'	94'	68'	47'

PICTURE AREAS (Approx.) covered by Filmo Lenses

Note: For camera distances from 1 to 9 feet, read the following table direct. For greater distances, simply move decimal point. Example: Area width for 1-inch lens on a 16 mm. camera is 2.45 feet at a distance of six feet. At sixty feet it would be 24.5 feet; at six hundred feet it would be 245 feet.

Lens Focal Length		Plane	Angle	Distance from Camera in Feet								
8 mm. Camera	16 mm. Camera			1	2	3	4	5	6	7	8	9
	15 mm.	Horizontal	36°- 6'	.67	1.35	2.05	2.75	3.40	4.07	5.00	5.45	6.12
		Vertical	27°- 6'	.50	1.00	1.50	1.95	2.50	2.90	3.40	3.90	4.37
12½ mm.	1"	Horizontal	21°-22'	.41	.82	1.22	1.63	2.04	2.45	2.86	3.27	3.68
		Vertical	16°- 9'	.29	.58	.88	1.17	1.46	1.75	2.04	2.34	2.63
1"	2"	Horizontal	11°- 4'	.20	.41	.60	.82	1.02	1.22	1.43	1.63	1.84
		Vertical	8°-14'	.15	.29	.44	.58	.73	.88	1.02	1.17	1.31
1½"	3"	Horizontal	7°-20'	.14	.27	.41	.54	.68	.82	.95	1.09	1.22
		Vertical	5°-26'	.10	.19	.29	.39	.48	.58	.68	.78	.88
	4"	Horizontal	5°-30'	.10	.20	.31	.41	.51	.61	.71	.82	.92
		Vertical	4°- 5'	.07	.15	.22	.29	.36	.44	.51	.58	.66
	6"	Horizontal	3°-40'	.07	.14	.20	.27	.34	.41	.48	.54	.61
		Vertical	2°-43'	.05	.10	.15	.19	.24	.29	.34	.39	.44

Aces of the Camera

(Continued from Page 331)

Brothers laboratory. One day the futility of slide making dawned on Fred with greater force than it had before, and he quit. He told Charlie that he was going to get a job in the picture business, the moving picture business. Pausing in his work of snipping, Charlie asked Fred to get him a job in the motion picture business, too.

Fred did get him a job in the motion picture business. Scrubbing floors in the old Jim Crosby lab. It wasn't much of a job, but at least it was aiming somewhere in the direction Charlie wanted to go. And being of a curious and inquisitive nature he was able to absorb in a very short time all that a lab man had to know in those days. At any rate, when the Crosby lab folded shortly after that, he was able to present himself as being an all-around lab man.

He went to work for the Griffith lab, but he found the work there too specialized. It didn't give him the opportunity to poke around and learn all the sundry tricks of the trade that he was steadily adding to his store of photographic knowledge. The National Film Company lab, with only three men on the staff, offered him much more. Over there he could do everything. And he missed no opportunity to experiment. So many of his experiments with chemicals resulted in the nothing more than a series of horrible, obnoxious stench that the head of the lab decided that Charlie was definitely an *outdoor* man. So they made him an assistant cameraman.

As soon as he got his hands on a camera it was pretty obvious that Charlie had made no mistake when he obeyed that impulse to get into the photographic business. And his familiarity with laboratory work and conditions made him more valuable than ever. In less than no time he was working as a first man.

As a first cameraman he worked for one independent after another. His work was always good, and he was always appreciated, but the company always folded. It became monotonous. So much so that when he heard about an opening for an assistant cameraman at Famous-Players Lasky he decided to give up his hard won distinction of first man, and take the job. Discretion, he decided, was the better part of valor. It was better to eat all the time as an assistant than only part of the time as head man.

It was a brave decision, and fortune favors the brave. The new studio was as quick to recognize Charlie's ability as had the others. Within six months he was working as a first man again.

He stayed with Famous-Players Lasky for five years, working with George Melford. His first picture, "Salome Jane," with Percy Marmont. And another he remembers particularly from that era was "Top of the World," starring Anna Q. Nilsson and James Kirkwood, which was notable in that it presented a technical innovation in split screen work for those days by putting one man's head on another man's shoulders.

When George Melford left Lasky for Fox he took Charlie with him. That was in 1926, and, except for a period with M.G.M., he has been on the Fox lot ever since.

His activities while with M.G.M. did a great deal to establish him as a globe trotter. He was identified with the "Tarzan" pictures, he went to Mexico to make "Viva Villa," "Mutiny on the Bounty" took him to Tahiti, and he spent seven months in China on "The Good Earth." He had an excellent reputation as an outdoor man, richly deserved, but rather embarrassing at times because of the disadvantages in Hollywood of being "typed."

His reputation as an outdoor man really began when he was sent out to get atmosphere stuff, within the continental limits of the United States, for scenes for "The Good Earth" which was being considered, at that time, for translation to the American scene. It was an idea that, fortunately for all concerned, failed to materialize; but which served to launch Charlie on his career as an outdoor man.

He visited some of the most lovely places in the American countryside, and to hear him tell it, the conditions were so unflinchingly perfect that only the rankest amateur would have fallen short on the assignment. Those who viewed the scenes were particularly pleased with the magnificent cloud effects that graced every shot. Somehow they wanted to give Charlie as well as Nature credit, and from then on he was the outdoor kid. It was a reputation it took him years to live down.

While on the subject of clouds it would not be out of place right here to say that the Academy saw fit to present Charlie with a special citation at their last annual awards for his research and development of the device that makes it possible to put clouds of

any type into a cloudless sky without recourse to special effects; a device that was explained in detail in a previous issue of the American Cinematographer. Actually, he developed the idea some years ago while shooting "The Cisco Kid" on a budget that would not permit special effects. It started as nothing more than an ingenious way to economically defeat the monotony of cloudless skies in an almost 100% outdoor picture.

Charlie Clarke is not happy just keeping abreast of things, he is always trying to anticipate events. At present he is experimenting with polarized light, and in microscopy. He is still trying to push the frontiers of photography back a little further, and he tackles his problems with imagination. Had he not been an Ace of the Camera he would have made a first class physicist.

He carries his imaginative, experimental ideas into his photography and is always ready to take the risk of trying for a new effect. Maybe he doesn't sell his ideas as well as some, but he keeps turning in excellent results by having the courage to be different.

Without having seen his recently completed "Thunderhead," which incidentally is the first feature picture to be produced entirely in the new Technicolor Monopack, Charlie thinks his best work was on "Four Sons," which he shot for John Ford, that great director whose appreciation for the cameraman's place in pictures has added so much to his stature as an artist. Others think he was at his best in "Moontide," "Hello Frisco," or "Guadalcanal Diary."

Charlie's hobby is the history of the cinema, and he is as conscientious an historian as he is a cameraman. His collection is one of the finest in the

(Continued on Page 357)

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At left is a picture showing blue photoflood lights used as booster lights in the making of exterior scenes instead of using reflectors. These lights were used in the making of "It's Up to You," reviewed on this page.

Review of an Industrial Film

By ED PYLE

Title: "It's Up to You."

Sponsor: Sears-Roebuck Foundation.

Producer: Paul J. Thompson, 709 South 4th Street, Yakima, Wash.

Type: Educational. (Apple picking fundamentals).

Length: 860 ft. (24 min.) 16mm. sound, Kodachrome.

Availability: address inquiry to producer, for distribution in apple growing states.

This excellent film is an example of what can be done, in the industrial field, using 16mm. Kodachrome, a good camera in capable hands, and inexpensive direct 16mm. recording equipment.

The credit titles indicate that the film was produced as a public service feature by the Sears-Roebuck Foundation, which is the only mention of the sponsor, hence a commendable and adequate amount of advertising. Cooperation is also acknowledged to the Washington State Emergency Farm Labor Committee, Washington State Board of Vocational Education, Extension Department of Washington State College, and the U. S. Employment Service.

Cast and staff consist of Paul J. Thompson—producer and photographer; featured player—Lorna Robertson, Nancy Nutley, and Fred Euteneier; story—Rolfe Whitnall; music—DeWitt Harrington; technical advisors—Curtiss Gilbert and Alva Strausz; narrator—Disk Kepingler. Laboratory and music by the Calvin Company. Equipment used was an Eastman 16mm. Special camera, blimped

for several sync narration scenes, a home-made dolly, and an Auricon NR-20 16mm. film recorder.

Aimed at the group level of young high school students, the film is a simple expository treatment of the fundamentals of apple picking. Emphasis is not only made that apple picking is a healthy form of profitable exercise, but is also an opportunity for high school students in apple raising states to do their part in the War effort, by taking the place of the regular crew, who are in military service, or in the war plants.

An opening sequence of spectacular but typical scenes of the great Pacific Northwest apple lands, provide the producer-cameraman with opportunities to prove his ability. Color quality of the Kodachrome print is superior, and the photographic composition and framing of all scenes throughout the film, is tops.

The best feature of the film is the adept and frequent use of close-ups and ultra-close scenes, to clearly illustrate apple picking technique. Particularly effective is the producer's use of blue photo-floods, wherever current is available, to boost the shadows in the outdoor scenes, instead of using reflectors. This gives a more natural appearance to flesh tones, and avoids the harshness of reflectors.

The well written and enacted story follows some high school girls who are "recruited" by a newspaper ad announcing a meeting of prospective apple pickers. At the meeting, the proper clothing for pickers is demonstrated. This scene is in a school room, and the lighting for such a large room, was well

handled. A dolly shot here was smooth and effective.

A minor distraction in the meeting scene is the camera angle, after a good dolly shot down the center aisle, cutting off the head of the woman demonstrating the clothing. This may have been intentional in order to avoid lip sync narration, and permit off stage recording later.

Following the meeting sequence, the young people are shown in an apple orchard receiving instruction in the fundamentals of apple picking, well illustrated with plenty of close-ups in which the color quality is superb. Then the gang goes to work, portrayed with some beautiful scenes of red apples being picked from lush green foliage, against a blue sky.

The narration is generally well worded, and the narrator's voice quality is good. However, there are a few seemingly long gaps in the narration, which possibly could have been written a little more closely. The constant organ music comes in louder from the background to fill the gaps.

This reviewer has a personal aversion to constant musical background on simple educational or industrial films, particularly when the music is in conflict with the narrator's voice, as occurs several places in the subject film. Such conflict is too frequent in most industrial films where "music" is attempted. The subtle blending of voice and music is difficult to handle, hence music should be avoided unless it can be smoothly faded out during the narration.

The Auricon sound quality was good, although in a few places some "blooping" ink could have been used to good advantage, to avoid a click when sound sequences changed.

The many good points of this apple picking film, more than make up for the slight demerits discussed above. Sound teaching principles are used throughout, and the film closes with an excellent review sequence, wherein the best close-ups and fundamental instructional points are repeated. An interesting closing montage uses scenes of war workers and members of the armed forces, each shown eating apples.

S. O. S. Expands

Two floors in the building at 450 West 42nd Street directly across the street from its present location, have been leased by S. O. S. Cinema Supply Corp. The concern has been expanding during the past two years, now occupying two floors at 449 West 42nd Street and a manufacturing plant at 452 West 46th Street, which is devoted 100% to war production.

Brulatour Organization Offers to Wrap, Address and Mail Christmas Gifts To Cameramen in Armed Forces

The Hollywood office of J. E. Brulatour, Inc., distributors of Eastman film, has just announced a service which should be of great value to the families and friends of cameramen and photographic technicians who are in the various branches of the Armed Forces of the United States, whether they are stationed in the United States or in foreign countries.

The Brulatour organization offers to wrap, address and mail all Christmas gifts which the families and friends of these men wish to send to them. If you wish to send a Christmas gift to any cameraman or photographic technician in the Armed Forces, all you have to do is take the gift to the Brulatour office, 6700 Santa Monica Blvd., Hollywood, with the following information: your full name and address as the sender; the full name, serial number and address of the person to whom it is to be sent, and a statement of the approximate value of the gift.

The Brulatour organization will furnish wrapping materials and will properly wrap and address the package, and

will then mail it. This service is absolutely free, and the Brulatour organization furthermore will pay the postage charges. This service, it is pointed out is a voluntary and cheerful one, aimed only at getting the Christmas gifts to the cameraman and photographic technicians on time and in good condition.

The announcement emphasizes the fact that neither the package nor contents will bear any identification of J. E. Brulatour, Inc. In other words, this is a service, purely and simply.

The time limit for mailing Christmas gifts to the men now over seas is October 15th. So all who wish to avail themselves of this mailing service should get their gifts in to the Brulatour office before that date. If your gift goes to a member of the Armed Forces stationed in this country you may send it later.

Quite naturally, the Brulatour organization's responsibility ends when the wrapped gifts are actually placed in the mail. A full record of each gift, date received and when mailed will be kept for future reference.

Two New Leica Products Announced

A new 127mm. f/4.5 lens for the Leica camera will soon be available, according to announcement by E. Leitz, Inc. All American made, including optics and the specialized helical focusing mount which couples directly with the built-in range finder of the Leica camera.

This new lens is for use in getting close-ups of distant objects—it produces images more than twice the size of those made with a standard 50mm. Leica lens, and will also produce portraits with much better perspective. The lens is highly corrected and makes very sharp pictures.

Another new Leica product to be released shortly is an Image-Erecting Universal View Finder. This has an adjustable mask to show the fields of view of Lenses from 35mm. to 135mm. inclusive. There are click stops to insure positive setting for the different focal length lenses, and the finder has a parallax adjustment. High accuracy, ruggedness and compactness are also claimed for this new View Finder which is designed for use with the Leica and other cameras making negatives approximately 1 x 1½ inches.

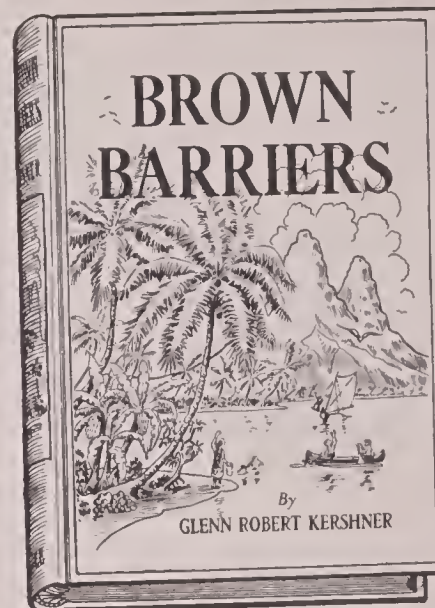
The bulk of the production of both of these new products will go to the armed forces, but there will be a small surplus available for essential users on priority.

Western Electric Oscillator

On September 1st a Western Electric publication well-known to the radio industry before the war as PICK-UPS once again made its bow under the new title, THE WESTERN ELECTRIC OSCILLATOR. Including a bright cover done in the war theme by artist Paul Rabut, the publication presents 36 pages of technical and allied information of interest to broadcasting and electronic people. The editor is Will Whitmore with Vance Hilliard, assistant.

In its initial issue THE WESTERN ELECTRIC OSCILLATOR carries a number of articles of significance to the radio industry. The lead story, "Radio Fights Its First War" by George de Mare, tells definitely how the men and women of the profession are standing up to their wartime responsibilities. The article is based on a comprehensive survey of individual broadcasting stations throughout the nation. Other titles include "FM Goes to War," "You Can't Win a War Without Radio," "A.T. & T. Plans for Television" and "Seventy-five Years of Pioneering by Western Electric," a two page spread of historic pictures starting with the founding of the Company and extending to its 75th Anniversary this year.

In addition to a profusion of interesting photographs done in the modern vein, the publication contains a dramatic spread of four full-page pictures in color.



A Fascinating Realistic Story Of The South Seas

The Author of "BROWN BARRIERS" spent many years in the South Seas; long enough to know the natives and the islands intimately. He selected the inspiring island of Bora Bora, one of the Society Group, for the background of this intensely interesting and authentic travel novel.

It was here in 1856 that a small boatload of men and a lone woman, survivors from the wrecked clipper ship Norbert K., worked their way through the opening in the foaming reef to what destiny held in store for them—Love, laughter, hate and romance told in gripping dramatic style.

"Kershner is at his best in writing of the sea and of ships that go down to the sea. His account of a storm on the briny deep is the most realistic that this reviewer has read."—H. C. S., Ohio Arch. and His. Quarterly, Vol. 50—No. 4 (Oct.-Dec. 1941).

"The author weaves a tale so vivid that the reader paces holy-stoned decks, and tosses copper pennies with deck hands, praying for winds to fill empty sails."—Virginia Hall Trannett, Col. Eve. Dispatch, Columbus, Ohio.

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High Efficiency Stereopticon

(Continued from Page 333)

erating in the same manner as that found in 35-mm background projection equipment, interrupting the light path, the shutter being operated in synchronism with the camera. Experimental work has been done using a shutter made of Aklo No. 2 heat-absorbing glass, which absorbs approximately 30 per cent of the heat, and which is transparent enough not to have the disturbing flicker effect of a solid shutter (Fig. 3).

It might be said that one psychological advantage in using a glass shutter in stereopticon shots is that the average director is not disturbed by shutter flicker on the screen which is always existent with the conventional type used in motion picture projection.

The following figures will indicate the conditions found without a shutter, with an opaque shutter, or with a shutter of heat-absorbing glass:

	No Shutter Per-Cent	Metal Shutter Per Cent	Glass Shutter Per Cent
Photographic value of illumination	100	100	100
Light incident upon eye	100	63	91
Heat incident upon slide	100	63	70

It is evident from the above that the introduction of the metal shutter reduced the heat flux upon the plate by 37 per cent, and, at the same time introduced the flicker characteristic typical of 35-mm background projection, whereas the heat-absorbing glass reduced the heat flux upon the plate by 30 per cent and caused a negligible flicker. With an increase of only 7 per cent in total heat on the plate, the shutter flicker was changed from a condition of 100 per cent illumination dropping to zero with the solid shutter, to a condition of 100 per cent dropping to approximately 80 per cent, under which circumstances the presence of the glass shutter could hardly be noticed. Obviously this freedom from flicker is of considerable value in exposure determination.

The sole purpose of the shutter, whether glass or metal, is the protection it affords the glass stereopticon plate from heat. The shutter motor is equipped with a magneto-type tachometer for determination of shutter speed when operating wild during tests and line-up operations. When shooting, the shutter motor is interlocked with the camera motor by means of a standard interlocking speed when operating with the camera motor by means of a standard interlocking distributor.

The preference for a heat-absorbing glass shutter blade over metal may be realized if the increase of heat transmission amounting to approximately 7 per cent will not result in damage to the slide, emulsion or breakage of the plate it is mounted upon.

The light path between the water-cell and field condenser unit is completely enclosed with a tight-fitting hood so that no appreciable leak-light is present. It has a convenient piano hinge cover for easy access to the shutter assembly (Fig. 4).

The field lens unit consists of 2 condensers, mounted with the convex spherical curves face to face with the input and output plano surfaces to the outside. The colored slide is mounted on the output side, and the unit revolves around the optical axis through 180 degrees so the slide may be leveled up for the horizon line or angled either way at will.

The slide is held away from the face of the field condenser by a specially designed 4-point holder, constructed to allow for the smallest point of surface plate contact, and to allow a cooling air stream to pass between the condenser and plate, preventing heat transmission and resulting in a minimum of plate breakage.

A squirrel-cage type blower is mounted directly below the field condenser and plate holder assembly, capable of delivering 200 cubic feet of air per minute, the speed of which is controlled by a switch

and rheostat from the main control panel. A Venturi-tube principle of adjustment with directional air baffles located directly over the blower and under the slide, provides the best possible directional adjustment for both sides of the slide simultaneously.

The objectives used are anastigmatic coated and consist of a 12-inch Astro f3.1 and 16-inch f4.5 Bausch and Lomb, which are quickly interchangeable in an adjustable focusing mount. When operating at approximately 225 amp. using 16mm positive carbons, the output of this equipment is in excess of 60,000 lumens.

The main operating panel is located on the right and operating side of convenient height on which are mounted all necessary operating switches and a 2-way "talk-back speaker connected with the camera operating table ahead of the projection screen.

The whole unit is very portable; the base is all metal, built on the dolly principle and mounted on rubber tire castors. It weighs 1800 pounds, and is equipped with convenient pan and tilt mechanisms and adjustments which lock tightly. The base has 4 screw jacks which lock the unit solidly to the floor after being placed in correct stationary shooting position (Fig. 5).

It is silent in operation for sound and is equally adaptable for both color or black-and-white stereopticon projection plates.

This whole problem of natural color stereopticons with respect to transparency process work is new and has required the most ingenious and cooperative efforts of various departments. While we do not claim perfection, we know we have achieved a reasonably

satisfactory result so far, which will improve with use.

The first step of accomplishment—that of color print duplication—was taken over by Earle Morgan and Ray Peck, heading up Paramount's Still Processing Department and they have, after many difficulties, ably surmounted most of the problems of copying, contrast control and color correction.

The second step and problem of transferring the duplicates has been very successfully accomplished by Barton H. Thompson of our Engineering Department, who has developed a rapid special control technique.

The number three step—that of engineering and constructing the unit—has been ably mastered by A. C. Zoulis, Chief Engineer of Paramount Engineering Department; Wilbur Silvertooth; Larry Brunswick; and the personnel of the Transparency Department. Were it not for the intelligent effort and perseverance of all these technicians, our stereopticons would have remained a difficult problem.

We have two of these units and have already utilized them in single and dual-color projection. With the constantly increasing production of color motion pictures we feel we are on the right track to accomplish better results in color stereopticon transparencies.

New Filmosound Library Releases

The following new film releases of the Filmosound Library have been announced by the Bell & Howell Company:

FOLLOW THE BAND (Universal)

No. 2542 6 reels Rental \$17.50

Jolly, clean comedy of trombone-tooting goat farmer who toots his way into the exclusive Dairyman's Association via Broadway's bright lights. (Eddie Quillan, Mary Beth Hughes, Leon Errol and "personal" bits by Frances Langford, Leo Carrillo, Alvino Rey, Hilo Hattie, King Sisters, Bombardiers, King's Men). Available from November 14, for approved non-theatrical audiences.

ALEXANDER NEVSKY

No. 5799 9 reels Rental \$25.00

Eisenstein's symbolic epic of the Russian people's struggle against the invading German knight's in the XIII Century; with a rich score by Prokofieff, camera by Tisse and starring Nicolai Cherkasov. The story is sufficiently elementary so that Russian dialogue presents no serious handicap.

COWBOY IN MANHATTAN (Universal)

No. 2575 6 reels Rental \$17.50

Hard-pressed dramatic producer plays young Texan for a sucker and becomes involved in a unique "hard-to-get" build-up that turns a mediocre show into a great hit. Interesting and uniquely intelligent musical. Five new songs. (Robert Paige, Frances Langford, Leon Errol, Walter Catlett). Available from November 21, for approved non-theatrical audiences.

Movie Tricks

(Continued from Page 348)

mountains in the background. There are beautiful clouds in the sky and in the foreground are rolling hills. You would like to make a film of that landscape, but you want a medieval castle, surrounded by a little village, on one of those rolling hills in the foreground. What do you do?

First you set up your camera on a tripod and select a pleasing composition. Through your view finder select the hill on which you want your castle and village. Next you must determine how large you will have to make your miniature castle and houses, and how far away from the camera you will have to place them. The two accompanying Tables, A and B, will explain this.

First, you must determine the hyperfocal distance of your lens selected for the shot (preferably a 1-inch lens). Test your light with your meter and see how far down you will have to stop the lens. Then consult Table A to see how close to the camera you must place the miniatures and still be within hyperfocal distance of sharpness. Now, take a tape measure and measure the distance from the lens to the miniature location, and mark the spot. Then consult Table B and see how wide the angle of the lens is at that spot. Then place a marker a few inches outside of both side lines. Within the markers you can construct, or set up, your miniature set.

By consulting Table A you will observe that if you are using a 1-inch lens and are stopped down to F8, anything five feet away from the camera is in focus to infinity. In Table B at five feet the width of the camera angle is 2.04 feet. Not very large, is it? Can you build a perfect little city in that small space, or would you prefer to make it a little larger, say six feet away, to make the work easier? If you want it larger simply determine the size you wish and then consult your two Tables for location and focus. However, before you start constructing the miniatures I would suggest that you lay out your village on a drawing board absolutely to scale so that everything will be perfectly correct in the fall off of your perspective. Remember, never guess, but always build to correct proportions.

When you have built your miniature castle and village, then comes the great day—the day you set it up and photograph it. When the miniature is set up and you are ready to shoot, you set up your camera at the spot where the miniature looks best through the view finder. Then be sure you anchor the camera so it will not move a fraction of an inch. You are all ready then to take your light meter readings and shoot. Should you need a little soft light on

the miniatures put it on, but as a rule it is best to diffuse the light so that it matches the light in the distance.

After you have shot your first miniature shot you will be surprised at the results, and probably will become a miniature addict, for you can get results, after some experience that will simply amaze you. After shooting the miniatures do not throw them away. Hang them in your workshop or attic on wires. Maybe by slight changes you can use them again.

I shall never forget the thrill I experienced when I made my first miniature. It was during the making of a picture of Henry Ford's life, back in 1918. I wanted a shot of his first workshop, the one in which he built his first Ford car. The building had long been destroyed. But I had a photograph of it, and set to work to make a replica of it in miniature. When it was completed I painted a background to match the old surroundings. Then I photographed it with my movie camera. I wound back the film, and by a series of double exposures had a man, who was a perfect double for Mr. Ford, walk several times in and out of the door, giving me a perfect establishing shot. The interiors of working on the car were made at a later date.

This miniature success led me to many others, and around 1922 or 1923, while doing camera work at Goldwyn Studios

in Culver City, I introduced the use of miniatures in their productions. During the years since then, under exceedingly capable men, that department has become one of the studio's most important photographic units. The men in such departments are known as miniature or process men.

You serious amateurs will find working with miniatures a fascinating experience, and once you have mastered the art you will enjoy many happy hours, and will make many entrancing films of which you will no doubt be well proud. Incidentally, if you have any further questions, or meet problems you cannot solve in your first miniature attempts, please write me in care of the American Cinematographer and I will reply in person and try to assist you.

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Francis Doublier

(Continued from Page 342)

confiscated his camera and film, because they did not want this film shown, and arrested them. It took the French consuls' pleas to get them out of jail but the camera was not returned to him until six months later. However, Francis had another camera and went about photographing people and places without any trouble. He still cherishes these souvenirs, but his heart sinks when he relates the great tragedy of Hodynky Plains.

From here, he covered every city in Russia which had electricity. Covering early newsreel events took Francis to many strange places. He went to Constantinople, Bulgaria, Romania, Athens, Cairo, Palestine, Bombay, Indo-China, Changhai, Peking, Yokohama and then to Paris in 1900. In each city, he made

several rolls of film of about fifty feet each and when he ran out of his allowance of film, he would go about, grinding an empty camera on the unsuspecting crowd, for this was the way of attracting an audience. When they came to the auditorium and did not see themselves on the screen, they wanted to know why and were told that the film turned out badly and that they could not show it.

Until the Lumieres perfected the projector, the camera was used for projection, as well as a printer, for on most occasions, it was necessary for Francis to print and process the local films so that it could be shown the day after it was made. When Francis relates the processing of the film, this is how he tells it, "First, I develop the negative in the cellair of the hawtell, pulling the film from a pail of develoaper, into a pail of water, then into a pail of hypo. Then I sneak into the baathroom, with my film, while the guests hollair for the baath and when I am fineesh, then I take the negativve up to my room, put up some cord, and hang them, squeezing the film through a piece of cotton soaked with vodka to dry. When the negativve is dry, I fix my camera for printing, then face the camera to the gaas or electric light and preent. Then I go back to the cellair, develoap the posativve, take it back to my room, hag it up on the cord and I use vodka squeeze and fan with a bad sheet for queek drying."

When he toured the continent, recording a documentary series of travel films and other subjects for the then fast growing film library of the Lumiere Cinematographie, the films were shipped back to Lyons, where they were processed in regular developing tanks, printed and dried on revolving dryers, edited and later shipped to all parts of the world to be shown in movie nickelodeons. There were times when Francis rented a theatre or large auditorium and he would hire a military band to play during the showing of the film. As yet, there were no titles, so the audience followed the films from printed programs between changes of the films and the band

played music to fit the mood, as best they knew how.

As you now know, the equipment was guarded from the curious and those with ulterior motives. When Francis loaded his camera, he covered it so that no one could see the mechanism. He would not leave the camera in his hotel room; he carried it with him wherever he went. He took it with him when he went out for his meals; he even took it with him when he went out with a young lady. He relates that once he had one arm around his lady and the other was tightly holding onto his camera case. Never did he allow his lady's curiosity to get the best of him; believe it or not!

Francis Doublier travelled over one hundred thousand miles making and showing films in about four and a half years. When he wound up this tour and arrived at Lyons, he was twenty-one years of age. Believing that he had had his fun travelling and showing films throughout the world, he brought the apparatus into Louis Lumiere's office, put the equipment on his desk, and said to Monsieur, "I am thankful to you for the opportunity that you afforded me by letting me travel to all those wonderful countries. Here is your equipment, now it is time that I learn a trade, so that I can settle down and look to the future." Imagine that man. Taking into account the growth of this industry, he wanted to wash his hand of it all, because he felt there was nothing further to be done in it; the whole world had seen the movies, now he wanted to learn a trade!

However, he stayed with the Lumieres learning the manufacture of photographic materials. In 1902 they sent him to the United States to Burlington, Vermont, to open a manufacturing plant for paper, chemicals and plates. He went to Burlington, built the plant and manufactured photo materials until it was closed down in 1911. With the closing of the factory he decided to leave immediately for France and home. Jules Brulatour, whom he met here, befriended him, secured a position for him as chief of the negative department at the Eclair Laboratory in Fort Lee, New Jersey. Fort Lee was at that time, fast becoming the center of motion picture production.

At the great Eclair Laboratory fire in 1914 Francis had a narrow escape. He was carried out of the building unconscious when he attempted to rescue the negatives from the vaults. After that fire, he was hired as manager of the Solax Laboratory in Fort Lee. Two years later, he designed and built the Paragon Laboratory in Fort Lee and in 1918 he went to New York City to head the Eclipse Laboratory on 23rd street. In 1921 he went back to Fort Lee as manager of the Palisades Laboratory and in 1925 he became head of the Hirlgraph Laboratory. At present, he is with Major Film Laboratories. To anyone who ever worked with him, he is known as the "Boss."

(Continued on Page 358)

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General Precision Acquires Control of Ampro Corporation



Above, left, Axel A. Monson, President of Ampro Corp. Right, Earle G. Hines, President of General Precision Equipment Corporation.

GENERAL Precision Equipment Corporation has acquired control of Ampro Corporation of Chicago, one of the well known manufacturers of motion picture projectors for 16mm. and 8mm. film. Earle G. Hines, president of General Precision Equipment Corporation, in making the announcement stated that the acquisition was for cash, that no new stock of General Precision Equipment will be issued in connection therewith and that the present management of Ampro will continue in charge of operations.

Some of the subsidiaries of General Precision Equipment Corporation have long been the leading manufacturers of standard 35mm. motion picture equipment for theatres but have not made 16mm. or 8mm. film equipment. In October, 1943, General Precision Equipment Corporation acquired all of the stock of Motion Picture Engineering Corporation of Chicago which company specializes in projection equipment for industrial and commercial uses.

"With the acquisition of Ampro Corporation, the motion picture activities of General Precision will now include apparatus covering not only the professional 35mm. field, but also the requirements of 16mm. and 8mm. equipment for use by educators, industry and the amateur or 'home movie' enthusiasts," Mr. Hines said. "Thus the products will cover the complete range of equipment for motion picture projection. Other related equipment such as 16mm. and 8mm. cameras will be added when war activities cease and such development programs can be undertaken. During the war period the use of 16mm. motion picture film and projection equipment has been tremendously expanded since all branches of the armed services

have used it for training programs, for extension teaching and for entertainment. The value of motion picture instruction films has long been recognized by some of the leading schools of the country. The successful use by the armed forces on a great and varied scale has shown educators and industrial concerns as never before, the rapidity with which information can be imparted to groups of students by this method. Undoubtedly use of visual aids to educational programs will, when peace comes, be greatly stimulated by this experience."

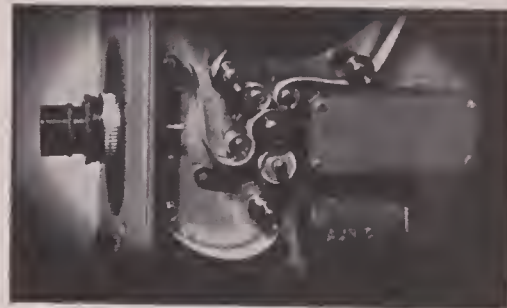
There are approximately 15,000 16mm. projectors now available in United States schools and considerable expansion of this equipment, in some schools to the placing of projectors in all classrooms, is contemplated. The University of Chicago recently announced acquisition by purchase of all of the teaching film originally produced by Electric Research Products, Inc., and by gift from Eastman Kodak Co., all of the Eastman classroom films.

Some industrial companies have long used 16mm. film as sales stimulators and during the war period, training films for employees have aided in increasing production. It is believed that such uses of motion pictures by industry will be greatly expanded in the post war period.

For the home or amateur use the demand for 8mm. silent movies and 16mm. sound and silent projectors was growing rapidly before the war. For the duration this market was frozen. With the improved equipment that will be available after the war, a considerable expansion is anticipated.

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- ★ Auricon 16mm. sound-on-film recorders and cameras are serving the Nation's War effort with Military and Government Film Units, and with civilian organizations producing essential morale and industrial training films. If your work in such fields makes you eligible to purchase new equipment, we invite you to let our engineers show you how Auricon portability and professional performance will simplify your recording problems.

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Aces of the Camera

(Continued from Page 349)

country, and includes part of the J. Stuart Blackton collection and the Selig collection. Among other choice items he has the legal testimony in the suit that Edison brought, in 1896, against the American Mutoscope and Biograph Company for infringement of patent rights, and which resulted in the establishment of Edison's claim. This transcript contains pages of direct testimony from all the great movie pioneers, shedding a great deal of light on the birth and growing pains of an industry that has grown to such amazing proportions.

Another bit of information that turned up after a very brief perusal of Charlie's historical effects, and one that this writer found most satisfying, was the reason a reel of film was established at 1000 feet. It seems that when motion pictures graduated out of the nickelodeons they went into the variety theaters, first as a novelty, and then as a "chaser," a chaser being something to empty the theater. The length of time a motion picture should run in a variety house was established by the simple procedure of estimating the average time of the average vaudeville turn, 15 minutes; or, at 16 frames per, 1000 feet of film. We hope that those of you who have worried about this small matter in the past will rest as peacefully with this information now that you have it as we did when we got it.

And incidentally, if those of you who read this have any items of historical interest to the movies, you could be assured of their preservation for posterity by giving Charlie Clark an opportunity to add them to his fascinating collection.

Important Notice to Graflex Camera Owners

The war may seem nearly over to some people but a note from Kalart advises that increases in their production of war materials, combined with a shortage of skilled mechanics, has forced them to discontinue installation of the special synchronizing unit for the Graflex camera which they have been advertising and installing for some time past.

The special synchronizer is installed to operate with the focal plane shutter of most Graflex cameras and opens the field of flash photography to owners of this camera. Kalart advises that they expect to resume the installation as soon as possible and suggest that the readers of American Cinematographer write the Kalart Service Department at Box 1234, Stamford, Conn., before sending a camera for installation. Kalart has established a waiting list as soon as the service can be resumed, giving precedence to those on the list.

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There are films to suit every taste and every age group—both entertaining and educational. Included in the line are News Thrills (from 1939 to present day)—Sportbeams (covering seventeen favorite sports)—Animated Cartoons (including Little King, Brownie Bear, Dick & Larry, Flip the Frog and newly released Jungle Jinks series)—Historic and Patriotic—Specialties (including a famous home movie horse racing game)—Concert films (for the music lover)—and a new and scintillating series of Musical-Comedies, starring such well-knowns as Lena Horne, Willie Howard, Imogene Coca, etc.

Write to Official Films, Inc., 625 Madison Ave., New York 22, N. Y., for your free copy of this home movie catalog.

B. & H. Announces New Film Cement

The new film cement perfected recently by Bell & Howell Company offers important new advantages. The tensile strength of the new B & H film cement is greater, the material in the bottle is completely stable and there will be no deterioration other than that to be expected by evaporation of any solvent of like drying time; there will be no attack on the cork and the material is not corrosive. This new cement has the added feature that it may be used "For All Motion Picture Film," both acetate and nitrate.

Bell & Howell is pleased to announce this new product on which two leading film laboratories already have given satisfactory reports.

Lasche Promoted

Russell H. Lasche has been appointed director of engineering and research for the Fairchild Camera & Instrument Corp. of New York, manufacturers of aerial, commercial, amateur and scientific cameras.

Mr. Lasche, a graduate of the University of Wisconsin's engineering school, has been with the Fairchild company 15 years, has recently been in charge of all sales of Fairchild equipment to the war department. During the 30s he spent two years setting up an elaborate aerial photographic department for the Colombian government, devising a program that is still in progress. While on this job he took the first photographs of the headwaters of the Orinoca river system, and aerial mapped the Caribbean coast.

Francis Doublier

(Continued from Page 354)

Twenty-two years ago he purchased a home in Fort Lee, where he still resides. He has his own experimental laboratory where he also keeps a collection of historical motion picture apparatus. He is the proud owner of a Lumiere camera, the first camera he ever used, which the Lumieres' presented to him when they sent him to America in 1902. He has compiled one of the finest films of the history of the motion picture which he exhibits in connection with lectures. He is one of those old

timers from whom we can still acquire important historical data, for his contribution to the motion picture industry has given a great deal to its greatness, like many who have gone before him.

At sixty-six he enjoys telling stories of his experiences of long ago as long as one is willing to listen to him. He is not a "has been" for he is still employed as head of a department in a laboratory. He knows his film, even though he is not a part of the Hollywood scene. Many important cameramen remember him well for they have had the pleasure of his advice and assistance and they still acclaim Francis Doublier "the Boss," a head man.

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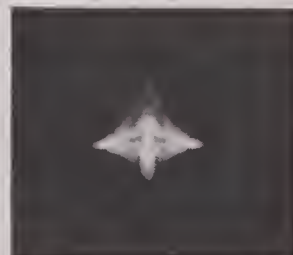
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STARS BAD AND GOOD—At left a "bad" star, at right a "good" star, as seen in lens bench microscope. In a lens which passes muster, the star must be symmetrical in shape and color, not exceed a maximum size. Weird shapes and bright colors mean rejection. Star images photographed at 11° off axis.

... makes possible
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of all time

The first of Kodak's "postwar" lens formulas are incorporated in such lenses as Kodak Medalist's f/3.5, the Recordak microfilm lenses, and Kodak's f/2.5 aerial lens for night reconnaissance.

Experimental aerial lenses of other speeds, designed and made by Kodak, each requiring years of computation, are now with the Air Forces.

ONE great factor in these new lenses is the revolutionary "rare element" glass developed by Kodak. In the past the lens designer begged for new types of glass for the development of his ideas. Now he has resources in glass which outstrip his creative imagination.

His position is similar to that of the physician who suddenly is given a new curative agent such as penicillin. It takes years to explore and realize its full usefulness.

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THE MOTION PICTURE CAMERA MAGAZINE ★

In This Issue . . .

Filming in the Snow



November
1944

NOV 16 1944

(No. 1 of a series on the manufacture of Du Pont Motion Picture Film.)



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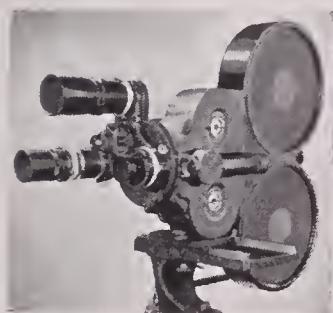


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Don Senick, Movietone News representative in the Pacific war theater newsreel pool, rests with his veteran Bell & Howell Eyemo beside a shot-up Jap Zero.

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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

NOVEMBER, 1944

NO. 11

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THE FRONT COVER was made on the set of Paramount's Technicolor musical, "Bring On the Girls". Karl Struss, A.S.C., is the Director of Photography. This scene is a rehearsal, and Marjorie Reynolds is shown as she prepares to sing "How'd You Like to Take My Picture?" Sidney Lanfield is the director.



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After Victory... the ADEL-AGE





CHARMING is this photograph of Peggy O'Neill, film starlet, who has just completed a role in "It's A Pleasure" for International Pictures. Photo by Maurine.

ACES of the CAMERA

ROLLA FLORA, A.S.C.

By

W. G. C. BOSCO

THE contemporary motion picture owes much to the legitimate stage and has borrowed freely from other expressive art forms, but in the realm of special and optical effects it has originated at the same time both an art and a science peculiarly its own. This fascinating and mysterious ability of the motion picture to make things seem to be what they are not, to accomplish the impossible, and to seemingly make real the absurd and fantastic has, it can be admitted without lessening the credit due elsewhere, been largely instrumental in giving the cinematographic medium that unique quality of omnipresence which makes all things possible on the screen and won for the medium such a tremendous audience all over the world.

The amazing, though not always obvious, effects achieved in today's motion pictures are possible because of the tireless experimentation and research done by a small group of men who, adding genius and vision to experience, have been pushing back the frontiers of knowledge for the industry. These men, unheralded and unsung for the most part, have made tremendous contributions through the years to the improvement of the end product.

Prominent among this group of the technical elite is Rolla Flora, A.S.C. 20th Century Fox, who just signed him to another long term contract, gives him a title to provoke envy in an Oriental potentate: "Director of Montages and Optical Effects." But even a tag like that fails to convey the magnitude or the scope of Rolla's influence on the motion pictures carrying the Fox label. Those who can remember the eye-straining properties of the early pictures and the shortcomings of the first effect shots can appreciate part of the contribution he has made to the industry by his

efforts and constant experimentation over the last twenty years to improve the quality of dupe negatives. And the Zoom lens, which opened up new opportunities for effect shots by making dolly shots possible when the use of a dolly was impossible, was another contribution developed by him eighteen years ago when he was under contract to Paramount. Its use permitted movie-goers the vicarious thrills of hurtling to the sidewalk from the top of a skyscraper, or to share the pilot's experience in a diving plane.

Rolla Flora started his photographic career in a drug store in the little town of The Dalles, Oregon, where he attended to the developing and printing for local Brownie snappers. By keeping his mind on the interesting possibilities latent in the science of photography at that time, and ignoring the subject matter imprinted on the negatives, because with monotonous regularity it showed some wag being devilishly funny in a woman's hat, he became possessed by a

passion for photography. He came to Hollywood, and got his start in the picture business as an assistant in the Famous Players-Lasky lab in 1921.

Studious and conscientious, he was afraid that his brief formal education would be a handicap to the realization of his ambitions; so he haunted the universities and made arrangements to be tutored in physics, and subjects allied to the photographic arts and sciences, by undergraduates majoring in those subjects.

The first rungs of the ladder were climbed slowly and laboriously. From lab assistant he was promoted to still photographer, then to assistant cameraman, and then into the loading room. And in every spare moment he was experimenting or working on a new invention. His inventiveness and industrious determination brought encouragement from Roy Pomeroy, who, in 1923, gave him the chance he had been hoping for--trick photography.

(Continued on Page 389)





Left, Under combat conditions with camera held as shown, the cameraman has unobstructed vision above and to right and left of finder. He can see large upright finder image with both eyes, at any convenient viewing distance.

The New Auricon Automatic-Parallax View-Range Camera Finder

By W. G. C. BOSCO

BORROWING a page from the design of automatic aerial machine-gun sights, the new Auricon Automatic-Parallax View-Range Finder furnishes the cameraman, while he is shooting the picture, with an exact image of that picture as it will later appear on the screen.

Designed and manufactured for the Army by the E. M. Berndt Corp. of Hollywood, this new finder will soon be available for all cameramen doing work allied to the War effort. It answers a need long felt by cameramen engaged in all kinds of work and using all types of equipment because it will no longer be necessary to "hope for the best" after that first inadequate peep through the lens, or to try to follow action through a finder that is known to be "just a bit off."

Incorporating the latest developments in the science of optics, this first really modern finder is completely accurate and operates with the utmost simplicity. It

provides an erect, needle-sharp image framed on ground glass, right side up, and correct right to left, located at the front of a deep shadow box for maximum contrast and visibility. The finder image is so clear that a newspaper headline can be read with the finder at a distance of fifteen feet, or an airplane can be accurately located while just a speck in the sky. There is no dilution of the image as seen in the finder, and no "ghosts" or reflection in the image. Nor does the cameraman see his own reflection in the glass when working in bright sunlight. It combines automatic parallax compensation with a View-Range Finder which enables the operator to measure the distance from camera to subject in the finder and set his camera-lens accordingly.

When shooting a scene, the cameraman can hold the finder directly against his forehead, in which case the finder sunshade is cushioned with sponge rubber pads. He will then be viewing the

image at an optical distance of 10 inches (the finder itself measures only 6 inches long). On the other hand, he can, if he so desires, move back and look at the image at any convenient distance without regard to an exact eye position. The framing of the image in the finder does not depend on the viewing position of the eye, as in the case of "peep-hole" finders, and both eyes are used to look at the finder image at all viewing positions.

Under combat or field conditions, using the Auricon Finder does not blind the cameraman to what is happening around him, as is the case with "peep-hole" finders. He can operate the camera and finder about a foot in front of him and thus see above the camera and to right and left, with both eyes open.

The difference in viewpoint (or displacement) between camera and finder lenses, commonly called parallax, is automatically compensated for so that whatever is sharply focused in the finder is also corrected for parallax in the finder frame. The parallax adjustment is done optically inside the finder allowing the external finder casing to be solidly attached to the camera body. This provides a rugged and dependable arrangement and the lineup between camera and finder cannot be thrown out of critical adjustment by accidental blows or shocks to the finder casing or camera.

The automatic-parallax adjustment is controlled by a cam-plate located inside the finder casing. This cam-plate determines the displacement distance between camera lens and finder lens, for which the finder automatically compensates.

In the case of the Eyemo 35 mm camera, the displacement distance is 2.750 inches. If, for instance, this finder were later to be installed on a different camera having a displacement distance of, say 4 inches, the cam-plate can easily be exchanged, with the use of a screwdriver alone, for one intended for a 4-inch displacement distance. Thus parallax recalibration of the finder is avoided, for the footage-scale which controls the focusing range-finder and the auto-parallax is untouched.

The auto-parallax adjustment on the Auricon Finder has been mechanically worked out to five decimal places and is more reliable than former methods of cut-and-try parallax calibration accurate at only a few points.

While the finder is shown adapted to a 35 mm Eyemo Camera, it can also be used with 16 mm cameras such as the Filmo, Victor, Bolex, etc. For the Kodak Cine-Special, a finder mounting has been designed which enables magazines to be changed without disturbing the finder.

The finder can be finished to cover 35 mm sound or silent camera or projector

apertures, or 16 mm apertures, either camera or projector. Except for special applications, a finder covering the sound-projector aperture would be used.

For cameras using 35 mm film, the finder covers lens fields from a 35 mm wide angle (which is the full frame shown in the finder), 40 mm, 2-inch, etc., up to the 6- and 10-inch telephoto lenses, by means of inserted mattes.

When the finder is used with a 16 mm camera it will cover lens-fields ranging from the 17.5 mm wide-angle lens up to the 6-inch telephoto lens.

A magazine to carry up to 9 mattes is located in the back of the finder. A special device retains the mattes in the magazine chamber, yet an easy pull up-and-out releases the matte to be used. Another device incorporated in the matte slide at the ground-glass viewing screen, makes it impossible to insert mattes upside-down. This prevents errors when using mattes which have been individually cut to match telephoto lenses which may not center exactly on the camera frame.

A special master matte is available for test purposes in lining up perspective scenes or for fast camera operation where there is no time to change mattes. This master matte is of colorless, transparent Lucite and carries reticles showing the apertures covered (in the case of the Eyemo 35 mm camera) by 40 mm, 2-, 4-, 6- and 10-inch lenses, or other combinations if desired. With this master matte the correct lens to use for an individual scene is quickly apparent after which the master matte can be replaced with one covering only the single lens-field desired.

This new Auricon Finder is as unique in its field as the photo-electric cell exposure meter was in its field, when first introduced. For the first time a camera finder is available which is designed and built as a precision instrument. It should be a definite contribution for better pictures on the motion picture screen, and towards elimination of trouble and inaccuracy arising from the inadequate "peep-hole" finders available until now.

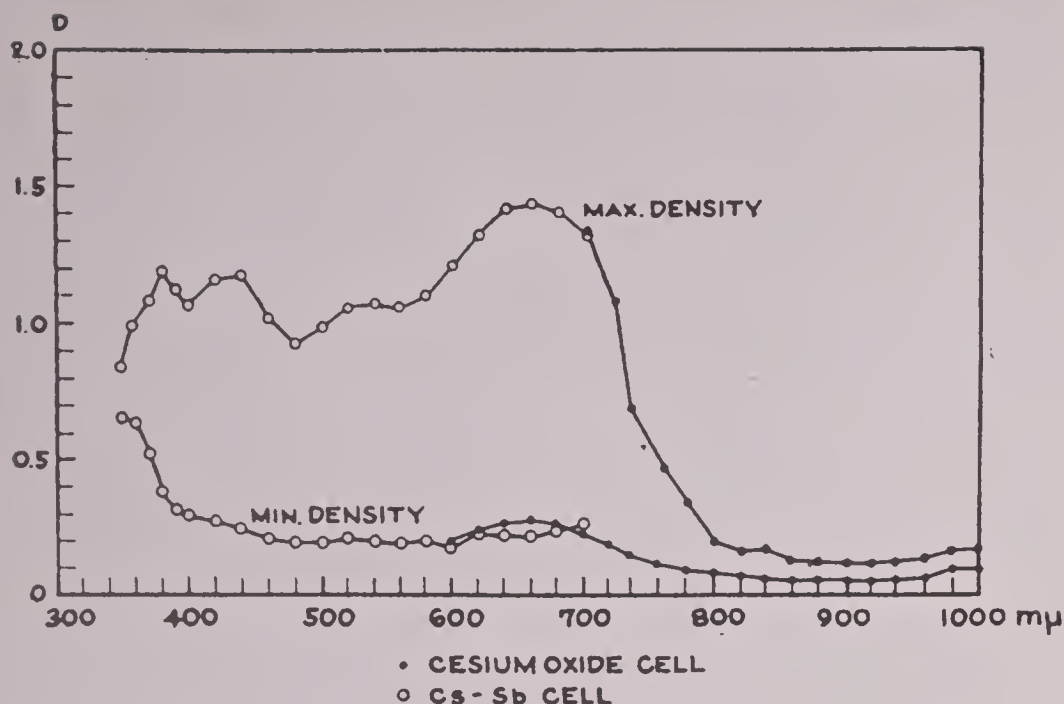


Above, Unretouched photograph looking through the new Auricon Finder, showing large needle-sharp image, upright and correct right to left. Focusing this image in the finder automatically corrects parallax and also indicates distance from camera to subject being photographed.

Bottom left, without tripod, "pistol-grips" on finder and camera provide means for shooting steady pictures in any position.

Bottom right, with pistol grips detached from finder and camera, equipment is used in the conventional manner with tripod.





Left, Fig. 1. Density of Agfacolor sound track as a function of wave length.

better reproduced with a red-sensitive caesium cell than with a blue-sensitive potassium cell. The reason for this is that the light modulation of the blue-toned sound track runs between blue and white, and that blue light does not appear appreciably darker to a blue-sensitive cell than white light. To a red-sensitive cell, however, the blue parts of the track appear almost opaque.

Because of these considerations, it was proposed² that each of the several colored layers could contain a different sound record, perhaps in different languages or covering different frequency ranges, etc., and anyone could be selected for reproduction by changing the photoelectric cell, or by using colored filters in connection with a cell sensitive to all colors. As interesting as this proposition was, it failed because the absorption regions of the available dyes overlapped. Later it was tried to place identical tracks in all layers and thus eliminate the defects characteristic of a single-layer sound track.³ This consideration led to the suggestion of the black-and-white silver sound track, as described in the beginning.

The fact that a color-developed sound track cannot be avoided in certain processes suggested investigations of the expected noise level,⁴ and also of the sound volume and distortion.⁵ The results of these investigations do not show that these simplified colored sound tracks are necessarily unsatisfactory.

The chemical structure of the sound track is immaterial, and the results are mainly determined by its absorption characteristics in the spectral regions in which the reproducer photoelectric cell is sensitive. The investigation of the question, why the sound volume is low and the noise level high, must start at this place. Fig. 1 shows spectro-photometric curves of Agfacolor sound track made at areas of maximum and minimum densities.

The abscissa (Fig. 1-translator) shows the wave length of the light and the ordinate the corresponding density. The measurement was carried out in two steps, first for the visible light and the long-wave ultraviolet, and then for the infra-red and the connecting red part of the spectrum.

In order to show more clearly the phenomena in sound reproduction, Fig. 2 shows the same measurements converted from density to transmission. The distance between the two curves at any wave length represents the greatest possible sound modulation at that wave length for this type of track. Therefore, the region between the two curves is crosshatched in Fig. 2. If we start from the premise that the spectral sensitivity of the photoelectric cell must be adapted to the region of greatest modulation, we should use for this film a photoelectric cell which has a sensitivity only in the

Reproduction of Color Sound Records

By R. GORISCH and P. GORLICH

THE question of a sound record on color film seemed to have arrived at a final solution, because only a few of the proposed color film processes satisfied the constantly increasing requirements, and therefore the possibilities for sound recording became less numerous. Silver sound tracks were recommended for the more successful color film processes, as for example, in the case of Agfacolor film, where by means of a special protecting method, a black-and-white instead of a colored track was obtained, or in the Technicolor process, where black-and-white stock already containing the sound record served as a base on which color transfers were made. However, this technical development was interrupted when, for reasons of simplicity and perhaps of cost, it was tried in the Agfacolor process to produce a colored sound track exactly in the same manner as the picture. The following discussions deal with the phenomena occurring in the reproduction of such colored sound tracks. In conclusion and for the evaluation of the results new types of photoelectric cells will also be discussed.

Even the first educational and advertising films prepared by the Agfacolor process showed that the correct reproduction of sound offered greater diffi-

culties with a colored track than in the case of black-and-white. This phenomenon was not particularly studied at that time because the color process was only in the experimental stage. However, since regular features are now produced by this process, it seems worth while to study the problem more closely. Even when the first experiments were made, it was found that the volume control of the reproducer had to be adjusted to a higher setting if a colored track was played, and that the noise level of such a track was much increased. High in the case of fresh prints, it rapidly became unbearable as the film wore out.

For a study of the question of whether these two phenomena are connected, and what is their cause, we have made some experiments which will now be reported. First, however, we shall briefly mention previous publications on the question of the reproduction of colored sound tracks.

The question of colored sound tracks has been discussed for a long time in connection with earlier two-color films. These films used positive stock coated on both sides with emulsion layers that were toned in complementary colors, and the question arose on which side the sound track should be printed. Otis¹ found that this question cannot be answered in a general way, but that it was important to know the spectral sensitivity of the photoelectric cell used for reproduction. He found, for example, that, if the sound track of the multicolor film is in the blue layer, the film is much

Note: The article above was reprinted from *Kino-technik*. The translation was by Werner Eichler, Research Laboratories, Eastman Kodak Company, Rochester, N. Y., and is printed here through the courtesy of the S.M.P.E. Journal

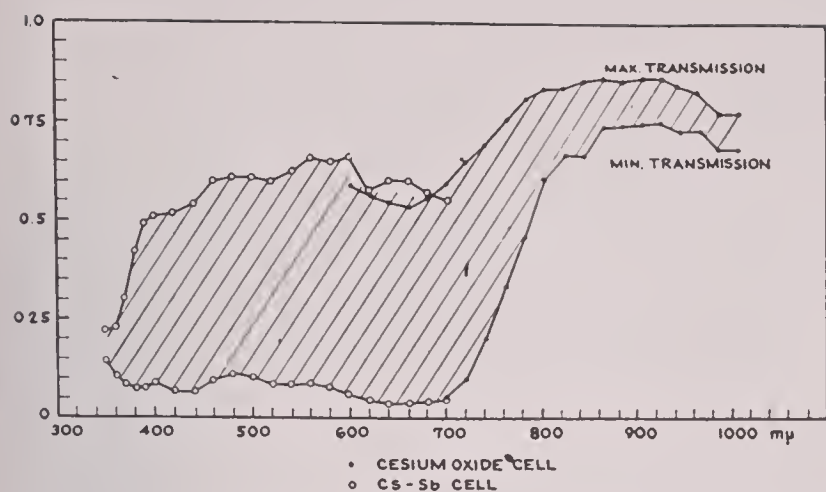


FIG. 2. Transmission of Agfacolor sound track and fog as a function of wave length.

visible region, especially at about 650 mμ. However, this is not the case in modern photoelectric cells. Their sensitivity lies in the infra-red, therefore, in a region in which the maximum density of the sound record is low, their transmission, therefore, is very great. In addition, the sound lamp radiates more strongly in the infra-red than in the visible spectrum. If we multiply for each wave length the three factors influencing the magnitude at the photoelectric current, that is, film transmission, sensitivity of the cell, and sound lamp radiation, as is done in Fig. 3, we obtain the spectral distribution of the product for these as shown by the curves of Fig. 3 represented by the designation caesium oxide cell. The two cases of maximum and minimum density are shown. The area lying between such a curve and the abscissa corresponds to the total current flowing through the photoelectric cell. The area between the average of the two curves and the abscissa represents, therefore, the average photocell current, the area between the two curves the photocell modulation. For the caesium oxide cell we cannot expect good results on account of the poor relation between the two areas.

If we substitute for the infra-red-sensitive photoelectric cell, a cell which has its sensitivity maximum in the region of the blue light (Cs, Sb cell), entirely different curves are obtained. These curves are also recorded in Fig. 3, and the sound lamp radiation is considered as before. It is seen that for these cells a much more favorable relation exists between the photocell rest current and the modulation alternating current.

In order to extend these results to the practice, a sound strip was photometered with the same cells. The following values were obtained:

	Caesium Oxide Cell Per Cent	Cs, Sb Cell Per Cent
Tmax.	88	60
Tmin.	70	7
ΔT	18	53
TR	79	33.5

These values clearly explain the low sound modulation with the use of the customary cells. Küster⁵ compared in his work the color reversal film with a silver

reversal film. He found a lower modulation for the color film which revealed scattered values even if photocells of one type were used so that, apparently, small differences in individual cells have a considerable effect. However, only caesium cells were studied.

On the question of background noise it has been found previously⁴ that in the conversion of a silver image to a dye image a change of the background noise occurs. This may be calculated by determining the change in the transmission of the layer. However, this is merely noise from grain, or that part of the background noise which is based on the grain structure and which is heard only with entirely undamaged film. This is less important in practice because the so-called scratch noise, including all the noises due to dust particles, scratches, dirt spots, etc., is normally stronger and increases considerably after the film has been used for some time. This scratch noise is proportional to the average transmission of the sound track, because all dust particles and other irregularities cause a much greater light impulse, if the film is more transparent. The last line of the table shows that for normal photocells the average transmission TR of the color sound track is very high and, consequently, when this cell is used a very strong background noise must be expected, which is even increased as the reproducer gain is raised on account of the low modulation.

Therefore, the two phenomena of low sound modulation and high ground noise are connected with each other, and both have their cause in the improper adaptation of the photocell to the absorption of the dyes composing the sound record. It is clear that the use of other photocells will give much better results. The right column of the table contains the values for a blue-sensitive photocell. It is seen that the modulation is much greater than that of the caesium cell and that the average transmission is decreased. Practice has shown that color-developed sound records can be reproduced well with these cells.

These explanations show why the external photoelectric effect was chosen for sound reproduction from the group

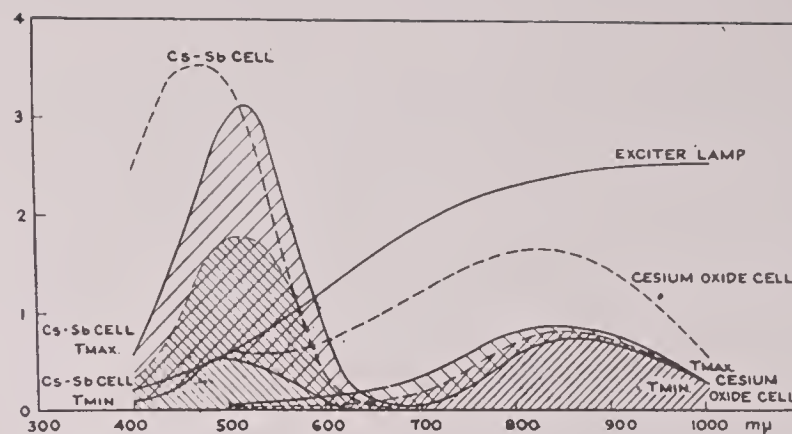


FIG. 3. Relationship between photocell current and wave length for Agfacolor sound track and 2 photocells of a different type. The spectral sensitivity curves of the 2 photocells as reduced to equal energy input and the spectral characteristic of the exciter lamp are also shown.

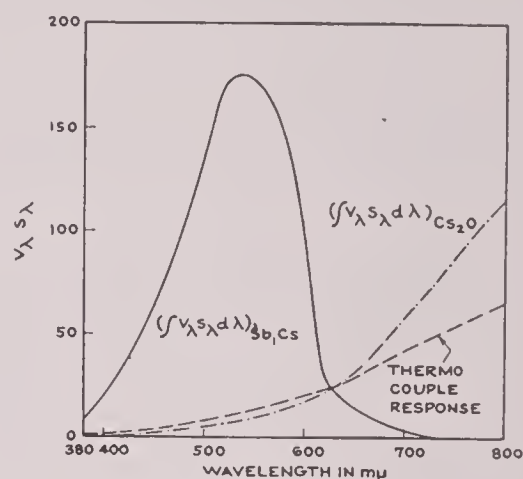


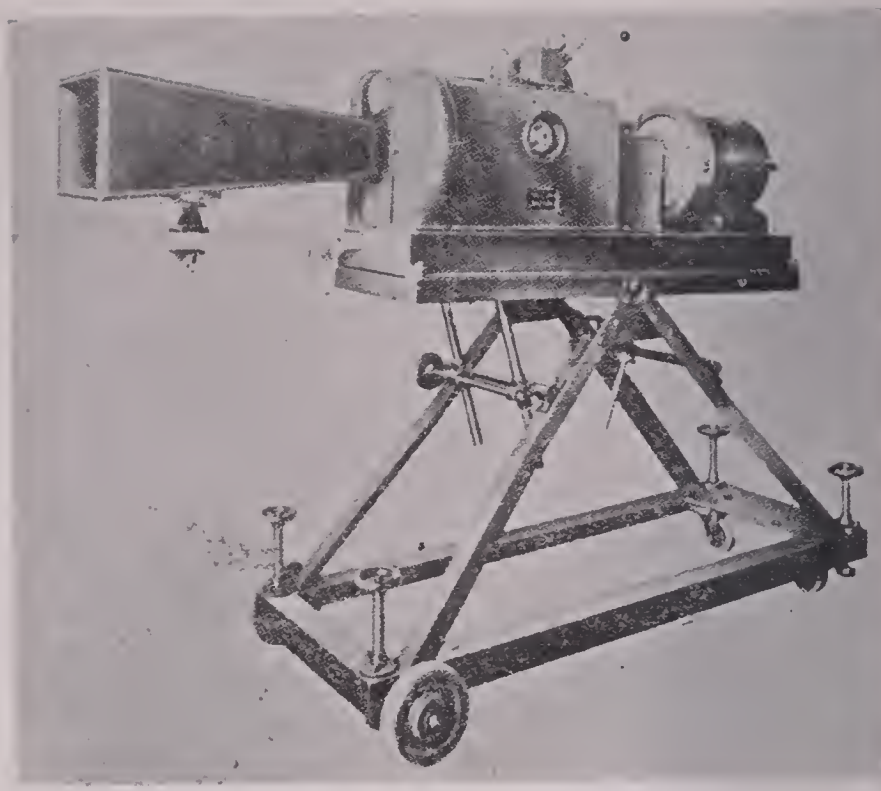
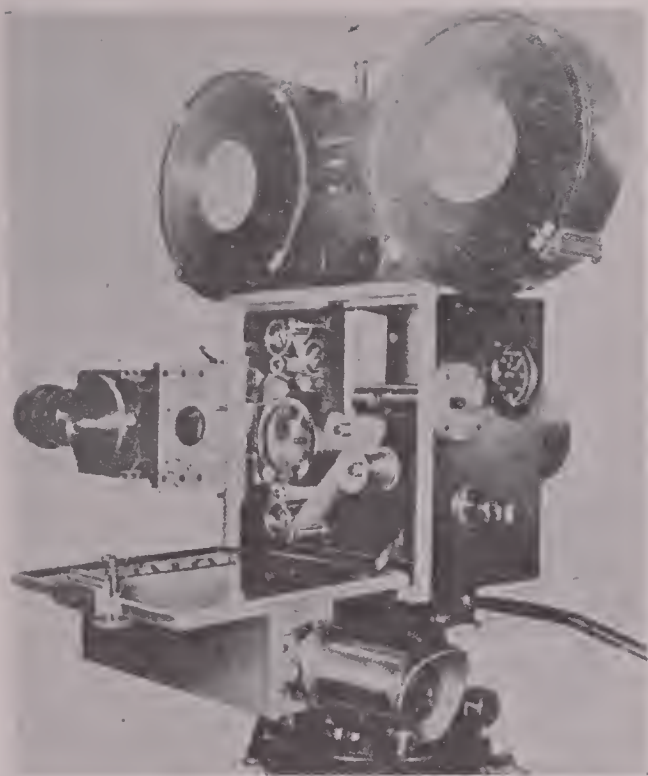
FIG. 4. Relative spectral response of caesium oxide and Cs-Sb photoelectric cells.

of photoelectric phenomena. In addition to the advantage of the great internal resistance of these cells⁶ they have the further advantage neglected for many years, that the spectral sensitivity of the cell can be changed according to the purpose and depending on the choice of the cathode material or the cathode layer. The caesium oxide cell generally fulfilled the requirements of sensitivity and spectral distribution for the reproduction of silver sound tracks. We disregard here the frequent desire to shift the spectral distribution of these cells beyond 1200 mμ toward the infra-red in order to be able to use the red rays of the sound lamps better.

Research in the field of high-sensitive oxidized alkali cathodes, among which is the caesium oxide cathode, was promoted mostly by Asao, de Boer, Kluge, and Gorlich and, referred to the caesium oxide cathode, gave approximately the following picture⁷: The caesium oxide layer coated on a silver support contains caesium atoms. Adsorbed caesium atoms are on the surface and decrease the energy necessary to liberate electrons so that the degree of coverage plays an important part. The photoelectric sensitivity may be increased by additional introduction of foreign metal atoms.

The requirement of the photocell with respect to colored sound track, namely,

(Continued on Page 388)



Above left, Fig. 1. Vinten H.S. 300 High-Speed Camera.

Above right, Fig. 2. Vinten H.S. 3000 High-Speed Camera.

High-Speed Cameras

By E. D. EYLES, B.Sc., F.Inst.P., F.R.P.S.*

AMONG the limitations of the eye in observing the course of a scientific experiment is its inability to follow rapid movement. This limitation is most forcibly demonstrated by the conjuror who, by sleight of hand, can completely deceive the eyes of his audience. To illustrate this, here is a simple trick performed with the aid of a short length of rope. Grasping one end of the rope firmly in each hand and looping it in a prescribed fashion over the wrists, one may, by a rapid variation in the movement of the hands in throwing the rope from the wrists, either form, or fail to form, a knot in the rope at will. The variation in the movement of the hands is imperceptible to the eye solely because of the rapidity of that movement. (*The lecturer here demonstrated his point by performing the trick.*)

In order to obtain a solution to a problem of this sort, which has many counterparts in scientific work and mechanical engineering, it is necessary to adopt some means whereby the action can be slowed down to give the eye effectively more time to appreciate its detail. The only method available in solving such problems is to take a whole series of photographs at short intervals throughout the action. If these are taken on conventional motion picture film, the action can then be synthesized, at a rate slow enough for the eye to follow its subtleties, by projecting the film at a fraction of the taking speed. This effect-

tively magnifies the duration of the action.

The normal projection frequency for films without a sound track is sixteen pictures per second. At frequencies below this, at the level of screen illumination required for satisfactory viewing, flicker becomes objectionable. A film will now be projected of the trick which has just been performed and careful attention to the movement of the conjuror's right hand will reveal the difference in the action which determines the formation of the knot. Slowing the action down sixteen times, as indicated in the sub-title of the film, requires that the pictures be taken at a frequency of about 250 per second, while prolonging the action to sixty-five times its actual duration requires a taking frequency of about 1,000 pictures per second. At this taking frequency of 1,000 pictures per second, the wrist movement, the duration of which is of the order of 1/5 second in actual practice, can be prolonged to some 10 to 12 seconds on the screen. It will be appreciated that finer detail in the movement can be revealed by examination of individual pictures, from which measurements of the mechanical displacements can be made if necessary. Further, if at the time that the pictures are taken a time scale is photographed alongside them on the film, it is possible to make a complete analysis of the motions involved with respect to time.

Intermittent Film Movement

Having outlined the problem and indicated the method by which it can be solved, it remains to consider cameras

designed to obtain the desired photographs. It is proposed to consider only cameras which are available commercially and which can be used in conjunction with standard 35mm or sub-standard 16mm or 8mm motion picture film upon which are recorded pictures in the conventional manner suitable for projection on normal motion picture projectors. The wider aspects of the problem and more specialized types of apparatus have been dealt with very thoroughly throughout the scientific literature, a bibliography of which has been given by the author elsewhere.¹

Some ordinary kinematograph cameras will take pictures at frequencies up to 128 per second. The films so obtained and projected at 24 pictures per second produce the well-known "slow-motion" studies of the action of racehorses and athletes with which everyone who visits the kinema is familiar. The "time magnification factor" effected under these conditions is only 5, but is sufficient to reduce the speed of the action so that the eye can follow it. The film transport in such cameras is intermittent, that is, the film remains stationary in the gate while the shutter is open and the picture is being taken. When the shutter is closed, the film is moved forward rapidly by a claw mechanism, bringing the next section into position in the gate. It is possible to run cameras of this type at frequencies up to about 300 pictures per second, a performance which is a tribute both to the accuracy of the workmanship of the camera engineer and the film manufacturer who perforates the film.

One camera of this type is the Vinten H.S.300 which is shown in the photograph, Fig. 1. The motor runs from a low voltage battery supply, and the pilot pins and other reciprocating parts have been specially designed to stand the

* An address delivered before the British Kinematograph Society on February 9th, 1944.

Right, Fig. 3. Eastman Kodak High-Speed Camera, Type III.

strain imposed upon them in starting and stopping 300 times every second. A time record can be photographed alongside the pictures by means of the light from a small spark controlled by a tuning fork.

Continuous Film Movement

At taking frequencies above 300 per second, it becomes necessary to move the film continuously through the gate. To preserve the definition in the picture while the shutter is open, two methods have been used. In the first of these, optical compensation is provided for the movement of the film, while in the second the exposure time is so reduced that the movement of the film in that time is negligible and consequently good definition is maintained. This is arranged by the use of a flashing light source to illuminate the subject, the duration of the flashes being controlled electrically and their frequency determined by mechanical synchronization from the film driving shaft in the camera.

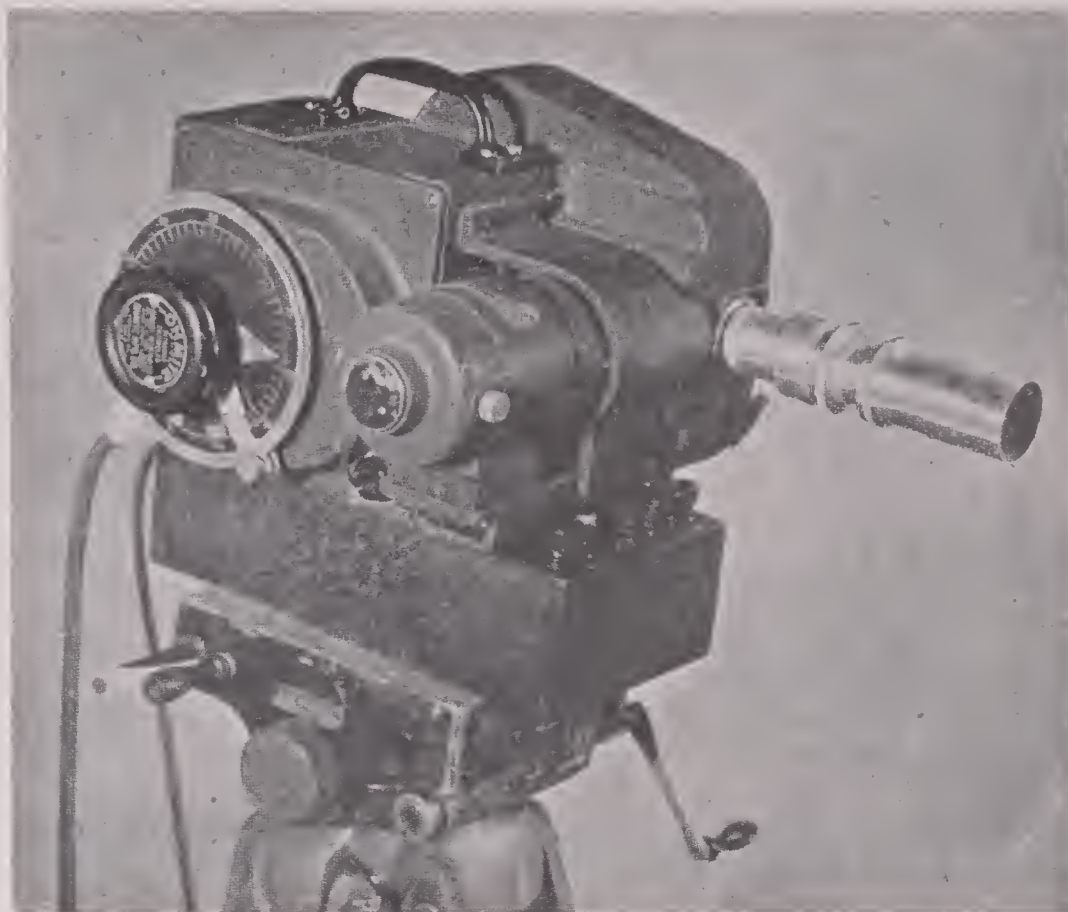
Optical Compensation

Probably the first high speed camera in which optical compensation for film movement was used was that designed by C. Francis Jenkins and first described about 1923.^{2, 3} This camera incorporated a series of forty-eight matched lenses spaced round the periphery of a circular disc which was rotated in front of the film and synchronized, through gears, with the film movement. In this way the image on the film is moved at the same rate, and substantially in the same direction, as the film while the exposure is being made.

Complete compensation cannot be obtained unless two such lens rings revolving in opposite directions are used, because the lenses move on an arc while the film moves in a straight line. However, over the relatively small movements involved, compensation is sufficiently satisfactory and good definition is preserved. The aperture of the lenses was $f/3.5$, and the camera, which used 35 mm. film, was a very heavy machine requiring a four horse-power motor to drive it fast enough to obtain a picture frequency of 2,000 per second.

However, some excellent pictures were taken with this instrument, the modern counterpart of which is the Vinten H.S. 3,000 high speed camera first described in 1939⁴ and shown in Fig. 2. A number of these cameras, which are built on rugged wheeled stands, are giving valuable service in armaments research work in this country at the present time.

Another type of optical compensator is that first described by Tuttle⁵ in 1933 and used in one form in the Eastman Kodak range of high speed cameras and in this and other forms in the Bell Telephone Laboratories high speed cameras, the most modern member of which is the "Fastax."



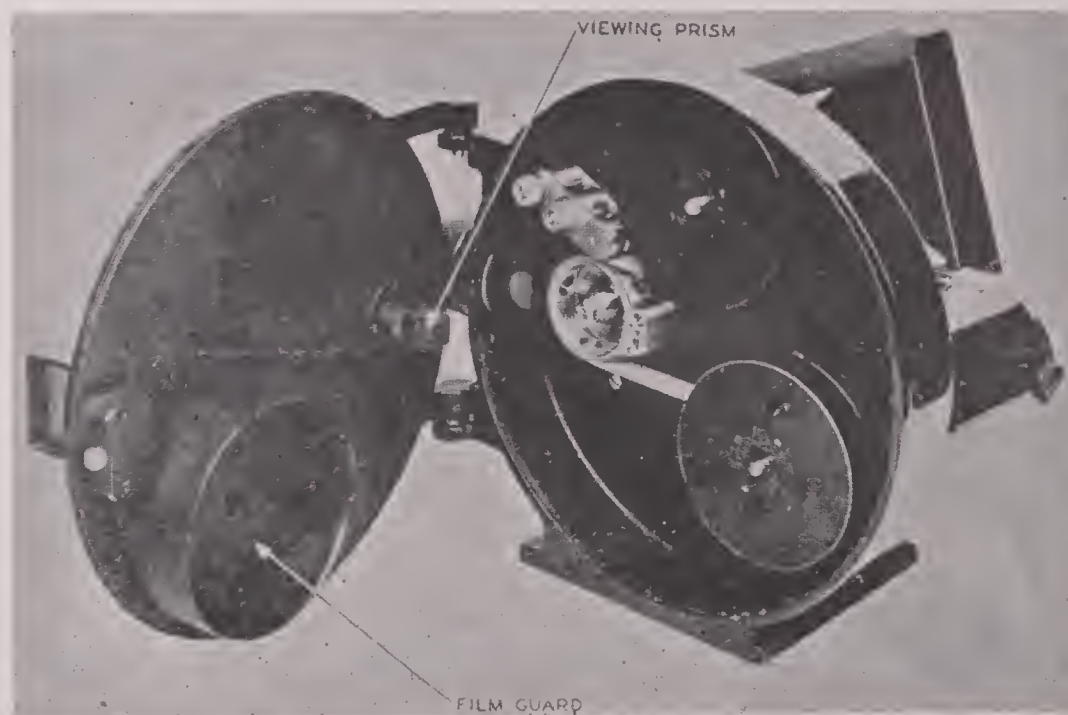
Eastman Kodak High-Speed Cameras

In the Eastman Kodak high speed camera, which is built to use 16mm. film, the compensator takes the form of a rectangular glass prism housed in a barrel type shutter. This is rotated between the camera lens and the film, its optical thickness and rate of rotation being so arranged that no relative motion of image and film occurs while the shutter is open. Compensation is again not perfect, some slight distortion occurring at top and bottom of the picture, but the definition compares very well with that given by the best 16mm. cameras of conventional type running at normal

speeds.

A photograph of the latest model of the Eastman Kodak High Speed camera, the Type III, is shown in Fig. 3. The camera is very small and portable, weighing only 55 pounds. It is driven by a 32 volt series-wound motor to which 115 volts is applied through a series resistance. This resistance is reduced automatically through a clutch driven from the motor until the speed of the camera reaches the desired value, which can be preset by a stop on the resistance control to leave a given amount of resistance in circuit with the motor. This system en-

(Continued on Page 380)



Right, Fig. 4. "Fastax" High-Speed Camera.



Who Can Judge?

By ALVIN WYCKOFF, D.Sc., A.S.C.

DO you get discouraged easily? Does some friend, or shall we say, acquaintance, spoil the fun you've had taking pictures after your own fancy? If the answer is "yes," then buck-up; take courage.

Let's try and analyze the reason for this emotion of displeasure. Let's break it up; stop the cause that stirs up your sensitiveness until it smarts with real pain every time some rude individual criticises the result of your photographic effort; picks your subject all apart to prove to you that it doesn't conform to the rules of artistic arrangement by laying out geometric angles across the skyline, the foreground and the margins until there isn't enough of the print left to look at.

There are certain definite rules that govern the basic arrangement of what is termed by artists, "Art," just as there are rules for the working out of mathematical problems, yet there are many brilliant minds that know as little about mathematical rules as there are those who are unacquainted with the principles governing artistic perfection. But they succeed in getting the right answers to their problems regardless of the set, scientific rules. They get the same correct answers as the well trained and studied mind, and sometimes, quicker.

The same is true in the realm of "Art." There are those individuals who have never studied any of the rules per-

taining to the basic arrangement of artistic lines and curves, but they can "out-art" a few of the artists who have devoted many hours of laborious study in their devotion to master the precise and correct arrangement of all the art curves and angles.

After all, what is it that makes a picture appear pleasing or displeasing? Isn't it the concept one forms in his own mind regarding it? We don't all like the same pictures any more than we like the same automobiles.

He who plays with photography as a hobby does so because he enjoys it as a form of pleasure; a distraction from the things of life that are irksome, and the pictures he takes are definite objects. If he carries his photographic steps through to a finished print he has a hobby that is as engrossing as any form of artistic endeavor could be, and for real instructive pleasure the photo-enthusiasts SHOULD follow every exposure of button pressing through its developing and printing stages.

Every time he aims his camera at an objective and "presses the button" he does so with a definite reason in mind; a picture he wants to make as a record to refer to again and again or perhaps a picture of something he wants to send away to some friend that will illustrate his descriptive words.

Why do so many of us "snap" pictures of animals? Maybe the animals

are out back of the barn midst surroundings that would make the ego-artist-critic choke with spasms of self-righteous indignation. But the picture is something YOU wanted, and to YOU it has merit; it is even artistic for what it is.

We may take a picture of a crowd going into a baseball game. Why? Because we are impressed by something about the crowd that is unusual; it's a different kind of a crowd. Someone we know in that crowd is sweating, cussing, and being pushed around. It's a picture that would be worth having. Something to show later on to the cussing man. To YOU it's a good picture because it tells something. It has a story attached to it, not of artistry; you didn't go in for art, but to YOU it's a wow and it CAN be interesting to others.

What about pictures of the girl friend? Maybe she's out in the garden trying to work out the weeds with a hoe, or down at the beach, or speeding down a roller coaster with her hair streaming out behind her and all fluffed up, hair pins all gone, her mouth wide open, her skirts blown up around her middle? Is it a good picture? Sure, it is to YOU. Maybe the girl friend would tell you it's "awful" and want it destroyed, but it brings back an active memory and tells a story all over again.

A picture should be something of human interest, not of artistry for art's sake. The very fact that a picture has story-interest proves it has merit and quality.

Pictures don't have to be artistic to be good. Pictures of human interest, pictures that will tell a story, news-pictures, are always interesting and compelling not only to the one who takes them but to many others.

Pictures of interesting story-telling can not always be of the artistic composition demanded by the ego-critic who "thinks he knows art." But on the other hand, if you go out to capture landscapes and seascapes and portraits, you must expect to meet up with a lot of criticism that is going to "burn you up," particularly if YOU yourself like what you've made.

There are two *very* important rules one must master in every picture he brings in, i.e., **CRITICAL FOCUS AND CORRECT EXPOSURE**, no matter what the subject may be, and, there is a third rule that is good to remember. Each time you "shoot" make a better picture than the one you made before. Learn to know the mistakes that have been made and don't repeat them. Don't try to be "cock-sure." If there is a doubt in your mind about the proper procedure, take time to study the problem, analyze it, don't waste film thoughtlessly.

There is no finer hobby or pursuit of happiness than the pursuit of photographic perfection. No matter what you "shoot," strive for improvement. It is the constant desire to achieve perfection that makes photography an interesting hobby.

(Continued on Page 394)



ON THE SET—This scene depicts a western nitery at the turn of the century, in Paramount's "Incendiary Blonde". In it Betty Hutton portrays Texas Guinan. The film is a musical in Technicolor, co-starring Miss Hutton and Arturo DeCordova. Photograph was made by Bud Fraker.

China Fights With Films, Too

By ROBERT JOSEPH

CHINA, which has been fighting the fascist aggressor for seven years at great odds, numbers motion pictures among its weapons. As its Armies, trained and equipped in part by the Allies, sweep across China to meet the Japanese foe, like its American, British and Russian Allies, is using films to educate its people, train its soldiery and entertain its citizens.

The Chinese motion picture industry survives today as another example of the resilience, resourcefulness and ingenuity of its people. Chinese leaders—Generalissimo Chiang Kai Shek and others, early realized the importance of motion pictures. Studios, if they may be called that in comparison to their Hollywood counterpart, were literally dug out of rock and soil. When the Japanese started to bomb Chungking, home of the Central Film Studios, the Chinese started going underground, and now studios and projection rooms exist twenty and thirty feet underground, safe from overhead danger.

"During the bombing season," Dr. Kinn Wei Shaw, representing the United States-China Film Exchange, stated on his arrival in the United States two years ago, "which seems to be always, the film companies work near the dug-out entrances while there are no planes in the sky. But then they come—and swiftly—almost mechanically the workers disappear into the well-ventilated dugouts where they resume their work without further interruption. Some mornings they start working right in the underground part—because they are sure an attack is coming. And usually they are right."

Some times during bombing hours the actors and their director spend their time rehearsing their lines, going over scenes. This offers the advantage of adequate rehearsal, and the Chinese directors pride themselves on the speed with which they work and the absence of retakes and repeated shooting of the same sequence. Rehearsals coupled with the fact that negative in China is at a premium together make Chinese pictures of a very high calibre.

The Chinese Government interested itself early in the problems of film production as well as film exhibition. In the three-year period between 1937 and 1940 some 135 feature-length productions were made, a schedule which compares favorably with those of such tech-

nically advanced in the film field countries like Sweden, Spain and Mexico. At present there are three "major" studios: The Central Film Studio, which concentrates on newsreels and educational shorts for the public; China Film Studios which makes documentaries for the Army; and the Chinese Educational Film Studio which is making subjects for schools and colleges. Entertainment films as we know them in this country do not exist. Films are made with propaganda intent. To paraphrase a spokesman on this subject: "Film and time are too precious for China to lavish them on pure entertainment that does nothing for China's war effort. Every film which is made in China today must be made to educate, to train, to instill patriotism and the will to win." As reported in the "Foreign Commerce Weekly" Chinese films must serve one or more of the following functions:

1. Develop national consciousness
2. Teach industrial techniques
3. Impart scientific knowledge
4. Impart general knowledge
5. Supplement school curricula

The first regular theatre was opened in China in 1912, an early start for the Chinese film industry, and not very far behind many European countries. By 1927 there were 106 motion picture houses in China. However, since electricity was unknown in the interior provinces of China further expansion was not possible. Nevertheless in the ten years that followed China built an additional 200 houses. Because of the Japanese invasion in 1937 and occupation since most of these houses have fallen out of Chinese hands.

The Chinese are fans in very much the same spirit which pervades American fans. They have their screen favorites, and seem inclined toward action melodramas. Musicals are next, and then the classical and semi-classical films. Technicolor pictures are popular, as is, of course, that international character, Mickey Mouse and his animated counterparts. Problem pictures are not appreciated because they are not understood by Chinese; problem pictures dealing with purely local issues and controversies, that is.

Major problem of exhibition in China, aside from the crucial one of a theatre shortage, is the question of importation.

"The Hump," as it is called, the air run from India into China, is well traveled these days; but plane space is given over almost entirely to the immediate needs of war: ammunition, armaments, military technicians, with little space left over for other war essentials. Yet the Chinese Government realizes the importance of motion pictures in its war effort. The law permits the import of 50 kilograms of film each month from each of several agencies operating in India. The Soviet Union has also been supplying from its bases north of China newsreels, training films and documentaries to supplement this thin Chinese film fare. In 1940, the last year for which complete figures are available, Chinese imports from the United States totaled 1,919,422 linear feet, valued at \$31,244. One of the devices used in getting films into China over and above the permitted 50 kilograms is to persuade travelers flying "The Hump" into China to include a few reels as part of their allotted luggage. Most of the pictures being shown in China are at least two years old, and most of them are films which enjoyed a wide popularity in this country. Because of this shortage repeated runs enjoy good business, and Chinese audiences see the same film as many as six and seven times.

In all of Free China there are somewhere near 2500 projectors for both 16 and 35mm films. Because of the preponderance of Chinese produced films in China most of the available screen time is taken up with native-made films. The films themselves are deliberately slow so that the information and propaganda content can be fully absorbed by Chinese audiences. In some cases, where the subject matter is complex, specially written pamphlets are distributed before the showing, and, on occasion, lectures accompany their films. In addition to the several thousand projectors, there are also a number of mobile units, some twenty-five in number, now operating in Free China.

In general China is more movie-conscious than ever before. Since 1937 motion pictures have played an increasingly significant part in China's national life, and evidence indicates that this country should be a good market for American-made films in the post-war world.

As nowhere else in the world China is proving the value of films in fighting the enemy. Chinese peasants and city dwellers who were in ignorance about China's war aims and the hope for her future welfare, have become aware of what this war is all about. The advantages of the motion picture as an instrument of propaganda for the good, as the Allies see it, is best demonstrated in the resurgence of national pride and dignity as a result of the wide-spread Chinese motion picture program, limited as it is by shortages, lack of facilities and lack of technicians.

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FILMS

American Taste In Screen Heroes Is Changing

THE American taste in motion picture heroes is changing, according to reports submitted by a staff charged with the duty of selecting films for preservation in the Library of Congress. The Library's film selectors have been struck by the fact that a number of war pictures found their heroes, this last year, in groups rather than individuals. The selectors also believe they have observed a tendency in certain war pictures to turn reformed criminals into heroes of the battlefield.

These and other generalizations are made by a staff engaged at the Museum of Modern Art in New York in selecting the films which are to be recommended to the Library of Congress for preservation. The Library makes no effort to preserve the "best" films made during a given year. Rather, its purpose is to choose for preservation those films which best record, in one way or another, the life and tastes and preferences of the American people during the period in question. Thus news films, and other films which present actual events, people, and places, are selected because of their documentary significance. Again, films which deal with problems of outstanding topical significance during the period under review are chosen for the light they throw upon the intellectual preoccupations of the Americans of the time. In a similar way, films which have grossed unusually large box office receipts, or which have won prizes of one kind or another, are preserved as indications of the taste of the time. Other films are preserved for reasons having to do with the motion picture art itself, as, for example, films which indicate new trends, or deviations in the substance or technique of motion picture production, films which illustrate technical innovations of importance, and films which, regardless of their integral value, contain outstanding performances by individual actors or groups of actors.

The selection of films by the Library of Congress is forced upon it by its lack of storage facilities. The Library is entitled, under the terms of the Copyright Act, to two copies of every title registered for copyright, films being included in the coverage of the Act. Ideally, the Library would preserve all films of any significance whatever, as it now preserves all books which may have interest or significance to future readers and scholars. A lack of storage space for nitrate film has made it impossible, however, for the Library to preserve copies of films in past years, and the same lack of storage space and necessary facilities has compelled the Library

to adopt a highly selective, rather than an inclusive acquisitions policy at the present time. Even the present limited policy has been made possible only through the generosity and imagination of the Rockefeller Foundation, which readily appreciated that the inability of the Library to preserve copies of films meant a serious and, in some cases, an irremediable loss to the people of the United States, and particularly to future American generations, which will undoubtedly feel a considerable interest in the pictorial records of these years.

The Foundation's grant, which enables the Library of Congress to employ a staff of viewers and selectors in New York and to rent vaults in which the selected films may be stored, expires in the spring of 1945. Meantime, however, the Librarian of Congress and the Archivist of the United States, acting under instructions from the President, and assisted by the architects and engineers of the Public Buildings Administration, have prepared preliminary plans and specifications for a central film depository which, if formally authorized, will be constructed at some point in the neighborhood of Washington and administered by the Library of Congress.

It is expected that the general conclusions of the Library's selectors as to the current American film output will be published in a forth-coming issue of the Library of Congress' Quarterly Journal of Current Acquisitions. Since the film selectors are obliged, in performance of their duties, to see all commercial films and to make recommendations of one kind or another with reference to each of them, their over-all view of the year's production will undoubtedly have its interest to sociologists and historians, as well as to critics and amateurs of the motion picture.

Certain of the preliminary reactions of the staff, in addition to their over-all comment on the motion picture hero of the year 1943-1944, have already been reported to the Library. The selectors have been struck by an increase in the use of narrative commentary, in place of dramatic dialogue, in feature films and in cartoons: a development apparently borrowed from the documentary film. They have noticed also a marked increase and technical improvement in the use of 16 mm color film "blown up" and used as 35 mm—as, for example, in "Memphis Belle."

In terms of the substance of the year's films, the selectors believe they have observed several tendencies of interest. For one thing, cartoons and slapstick comedies have made use of an anarchic

and chaotic element not observed in such films in recent years. Again, there have been one or two attempts to use psychological material seriously and with intellectual as well as dramatic understanding.

Finally, one or two fiction films have summoned up the courage to question, though timidly and with a hasty and saving rationalization, the morality of certain aspects of commercialism.

Fairchild Praised By Armed Forces

Fairchild Camera & Instrument Corporation, New York, manufacturer of the bulk of all aircraft cameras used by the armed forces, has been commended by high officers of both the Army and the Navy on its field service organization, set up in all war theaters around the globe.

In a letter to the Fairchild company, Maj. Gen. O. P. Echols, assistant chief of air staff, material, maintenance and distribution, said:

"The Army Air Forces desires to express its appreciation to your company for the service rendered by your field service representatives assigned to training installations in this country and in combat theaters overseas. It also wishes to commend these men for their exceptional and meritorious achievements.

"These technicians have not only trained thousands of members of Army Air Forces ground crews in the proper maintenance of equipment made by your company, but through their observation of combat performance, have also been instrumental in indicating improved methods of manufacture and maintenance. Many of them have performed this essential service at great personal risk to themselves.

"The Army Air Forces regards these men as an indispensable element in the all-American team of flyers, mechanics, technicians and production workers who are helping us destroy the military and air power of Germany and Japan."

And from the Navy—

Commander R. O. Greene, commanding officer, Pacific Fleet Air Photographic Squadron One, reporting to Rear Admiral D. C. Ramsey, chief of the Bureau of Aeronautics, singled out Harrison L. Currey, a Fairchild technical representative, for praise. He said, "By his diligence, untiring effort, cheerful co-operation and through knowledge of his field, he contributed much to the final success of several highly important photographic reconnaissance missions over strategic Japanese-held territory."

Commenting on Commander Greene's remarks, Admiral Ramsey wrote the Fairchild company, "Reports reaching the Bureau of Aeronautics indicate that other Fairchild technical representatives are also doing splendid work. The co-operation of the Fairchild Corporation in furnishing such excellent representatives is much appreciated."

"PROFESSIONAL JUNIOR"* TRIPOD

with Removable Head

Acclaimed the finest for every picture taking use.



*Patent No. 2318910.

The friction type head which is unconditionally guaranteed for 5 years, gives super-smooth 360° pan and 80° tilt action. It is removable, can be easily mounted on our "Hi-Hat" low-base adaptor or Baby "Professional Junior" Tripod base. The large pin and trunnion assures long, dependable service. A "T" level is attached. The top-plate can be set for 16mm. E. K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

The standard size tripod base is sturdy. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. Complete tripod weighs 14 lbs. Low height, at normal leg spread, 42". Extended height 72". All workmanship and materials are the finest.

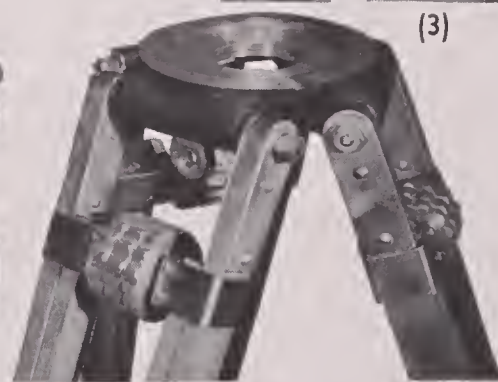
ADAPTABILITY: below are illustrated (1) the "Hi-Hat" ready for the friction type "Professional Junior"* tripod head (2) to be affixed. Under the "Hi-Hat" is the finger-trip head fastening nut that firmly holds the removable tripod head onto either the "Hi-Hat," standard tripod (3) or "Professional Junior" Baby Tripod (4). Note the positive-locking, fluted, height-adjustment knobs and tie-down rings on the standard (3) tripod base. The Baby Tripod has a "T" level, weighs 5½ lbs., is made of Aluminum, with Dural legs having spurs. Extended height—21 inches, depressed—16 inches. It's compact and sturdy. Quality throughout.

(1)

(2)

(3)

(4)



"Professional Junior"* Tripods, Baby Tripods, Developing Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and other Government Agencies—also by many leading News-reel companies and 16mm. and 35mm. motion picture producers.

The new "Professional Junior" Baby Tripod, shown ready for the Removable Head.

FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY

High-Speed Cameras

(Continued from Page 373)

ures smooth starting of the film and prevents undue strain upon it. If all the resistance is withdrawn, the camera can be run up to a frequency of between 3,000 and 4,000 pictures per second.

The magazine contains a 100-foot length of 16mm. film on the standard daylight loading spool, the film running from the feed roll over a sprocket which is not rigidly attached to its shaft but is connected to it through a stiff helical spring. The film runs on its back surface through the gate, thence over a take-up sprocket to the friction clutch-driven take-up reel. The sprung feed sprocket ensures that the film is held taut in the exposure plane in the gate, and reduces still further any slight strain put on the film in starting. The importance of these precautions cannot be over-emphasized, for, when the camera is set to run at 3,000 pictures per second, the entire 100-foot length of film passes through it in under two seconds. The film is accelerated to over two-thirds of this maximum speed during the passage of the first 40 feet.

Two automatic switches are provided on the camera. One of these can be preset according to the length of film loaded into the magazine to switch off the current supply to the motor immediately the film has passed through the camera. If this precaution were not taken, the motor would speed up when the load on it was released, and would soon burn out or overheat the bearings unnecessarily. The second switch can be preset to operate at any given instant during the passage of the film to make or break an electric circuit. This can be used to facilitate synchronization between the camera and the action to be photographed, where this can be controlled electrically.

The lens normally supplied for use with this camera has a focal length of $2\frac{1}{4}$ inches and an aperture of $f/2.7$. It has coated surfaces to improve its transmission and increase the contrast in the image. A 2-inch $f/1.6$ lens and a $4\frac{1}{4}$ -inch $f/2.7$ telephoto lens can also be supplied.

The view-finder is made to view directly through the film gate, in which a piece of matte film base may be placed to focus upon. The view-finder is thus completely free of parallax error. The front optical component of the finder can be set against stops in two positions. In the rear position the whole of the frame can be viewed, while in the forward position a highly magnified image of a small section in the center of the frame permits critical focusing.

A time base for use with this camera has been built in this country by H. Tinsley, Ltd., and is shown attached to the base of the camera in the photograph Fig. 3. It has been fully described elsewhere.⁶ It consists essentially of an electrically maintained 500-cycle tuning fork bearing at the end of its prongs two slit shaped diaphragms. By means of a lamp and a suitable optical system, these slits,

which form a shutter, are illuminated and an image of them is thrown onto the edge of the film. When the prongs of the fork vibrate, the light beam is interrupted one thousand times a second to produce a series of short dashes exposed alongside the pictures on the film. The time base can be supplied to operate either 115 volts A. C., or from a 12 volt battery.

The Fastax Camera

The Bell Telephone Laboratories "Fastax" high-speed motion picture camera has been described by Smith,⁷ and is designed to use either 16mm. or 8mm. film, the latter in the double width as supplied for the standard "double-eight" cine cameras. With 16mm. film a square section glass prism is fitted. No shutter is used in this case, so that light can pass from the lens to the film when either of the two pairs of parallel faces of the square are suitably oriented with respect to the film. This allows the prism to be run at half the speed of that in the Kodak camera for a given picture frequency. The shutter mounted prism has, however, some advantage optically, in that the shutter restricts the angle of rotation over which the optical compensation obtained approaches the theoretically perfect. There is a consequent reduction in the time of exposure at a given picture frequency. When 8mm. film is used in the "Fastax" camera, an octagonal prism is fitted.

The "Fastax" camera is shown in the photograph Fig. 4, and the compactness and convenience of the design are noteworthy. The magazine accommodates up to 100 feet of 16mm. film on the standard daylight loading spool, whence it passes over a large toothed sprocket wheel which drives it, and upon which it is carried through the image plane of the lens and to the take-up spool. On 16mm. film it is possible to take pictures up to 4,000 per second. On the 8mm. film, 8,000 pictures per second can be taken, because, while this is passed through the camera at the same linear speed, the vertical height of the 8mm. frame is half that of the 16mm. frame, so that twice as many pictures are obtained on a given length of film.

A ground glass screen view-finder is fitted to view through an aperture in the large sprocket forming the film gate, by means of a small prism which is attached to the camera door and is placed in the correct position when the door is closed. This system is, of course, free of parallax error.

Intermittent Light Sources

The exposure time at a picture frequency of 3,000 per second is about $1/15,000$ second for the Kodak camera, about $1/9,000$ second for the "Fastax" 16mm. camera and $1/12,000$ second for the "Fastax" 8mm. camera. For each camera it varies inversely as the picture frequency. These exposure times are relatively long and only made possible when

(Continued on Page 392)

ROHDE



MT/Sgt. Alfred W. Rohde, Jr., of the U. S. Marine Corps, who parlayed a pair of Texas cowboy boots and an idea for a motion picture camera design into world-wide fame, shown above shortly after the Marines completed their invasion of Guam.

Sergeant Rohde, who had kept his Texan boots constantly with him ever since he joined the Marines in 1937, wore them for good luck during the Guam invasion. He also wore them as a talisman when he competed in DeVry Corporation's 1944 Motion Picture Camera and Projector Design Competition. He carried off one of the top awards for his suggestions for motion picture camera refinements. He may have additional suggestions to offer as a result of his combat experience as an official Marine photographer.

"I am willing to risk the extra inches of the high heels in combat just to have a bit of Texas on my feet," declares Sgt. Rohde, "and also because the boots have always brought me good luck."

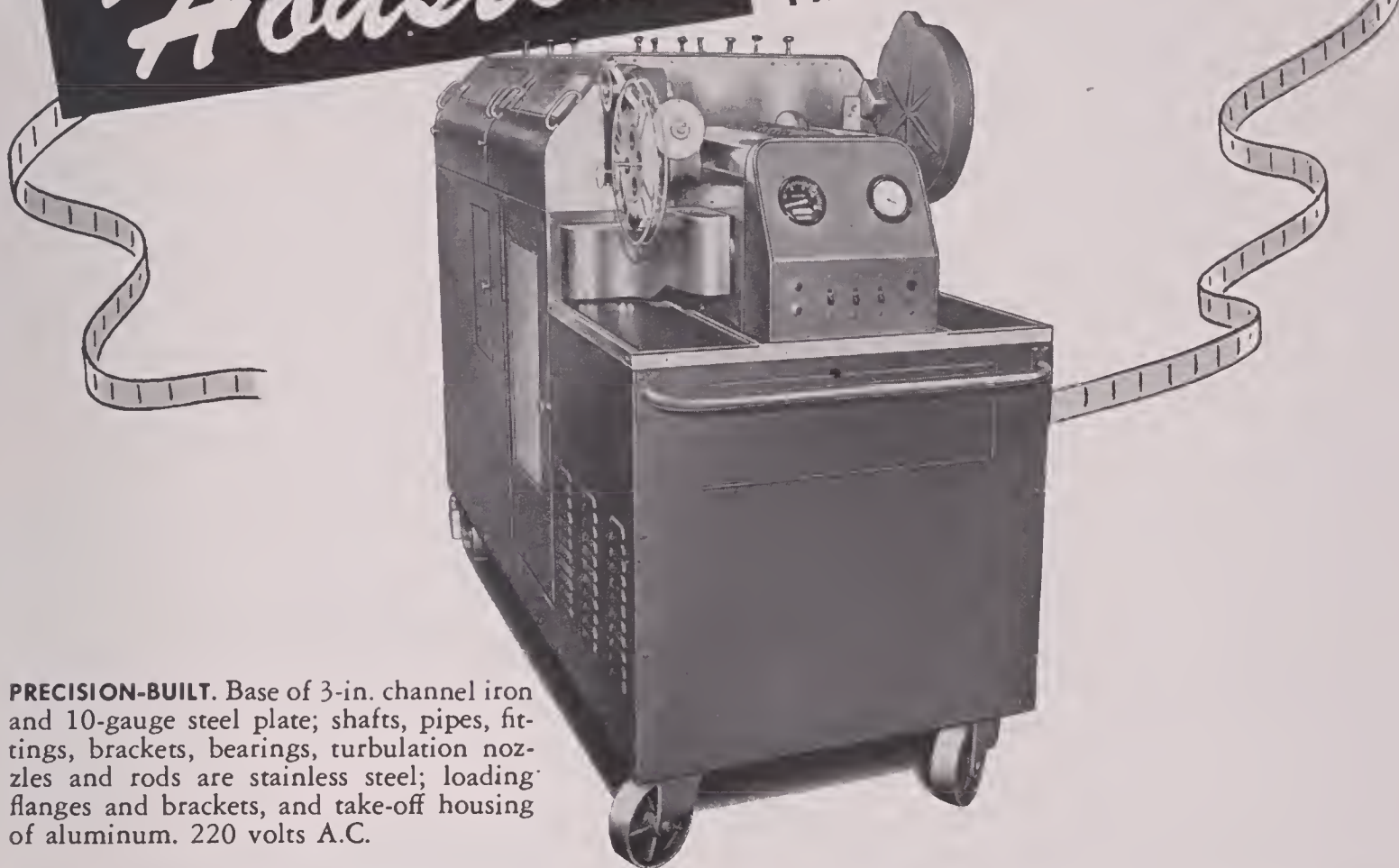
Sergeant Rohde has contributed a number of articles to the American Cinematographer.

Western Electric Announces Thermistor as New Product

The Western Electric Company has added the thermistor to its list of electronic and communications equipment now being manufactured for the Armed Forces. Like many other products that have come of age during this war, thermistors will have a vast number of peacetime applications in the electronic world of tomorrow.

MODEL 1 Houston

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FILM PROCESSOR



PRECISION-BUILT. Base of 3-in. channel iron and 10-gauge steel plate; shafts, pipes, fittings, brackets, bearings, turbulence nozzles and rods are stainless steel; loading flanges and brackets, and take-off housing of aluminum. 220 volts A.C.

Houston's Model 1 puts into action the most advanced methods of processing 16 mm. reversal film.

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PREDETERMINED MACHINE CONTROL—Temperature, agitation, film travel, and all other fixed or variable factors in film processing are under constant, positive control.

UNIFORM RESULTS are assured. No guesswork; no sub-standard work.

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COMPACT, CONVENIENT, EASY TO OPERATE—Only 72 in. long, 52 in. high, 30 in. high. Mounted on casters for easy movement anywhere. Easy to operate. Loading and unloading can be done while machine is in operation. All chemicals needed for processing are supplied weighed, packaged, numbered and color-coded for easy, accurate mixing. Operator's instruction book is furnished with each machine.

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READY FOR SHIPMENT. Battery of Model 1's on Houston factory floor ready for crating and delivery to users.



AMONG THE MOVIE CLUBS

Attention, Publicists!

With considerable interest we note that on the official stationery of most of the amateur clubs there is usually listed the name of one person designated as handling the club's publicity.

We often wonder why such names are so listed, for, with very few exceptions the club news that finds its way to the desk of this editor comes from the secretary, sometimes the president, of the various clubs. Many clubs send in their news a month late. This month, for example, we received a report of the September meeting of one club just as we were closing the forms of our November issue. Quite naturally, we could not use such stale news.

Don't you club members think it would be a good idea for your members handling your publicity to really get to work and get it out on time. Closing date for copy for this magazine is the fifteenth of the month preceding publication. In other words, copy to appear in the December issue should reach our desk by the fifteenth of November.—The Editor.

Syracuse Club

Members of the Syracuse Movie Makers held its October meeting in the new club house which it has acquired, complete with dark room, auditorium and all the things movie clubs dream of some day having.

On the program were "The Hollow Idol", "Hurricane", "Simple Religion" and "Beyond Manila." Members of other amateur clubs will undoubtedly be sorry to hear of the passing of Robert F. Kimber, who served as vice-president of the Syracuse Club for 1943-44. He started the publication of the club's "View Finder."

Brooklyn Club

The Brooklyn Amateur Cine Club held two meetings in October. The first was a more or less general get together. At the second meeting two unusually fine films were screened. They were "Dream of a Faun," and "My Native Land." These films were both made by Jordan C. Smith, and won prizes at the Mineola Fair. One of the features of the program were the unusual records Mr. Smith made to accompany the films.

Welcome, Aurora

The Aurora Cine Club, of Aurora, Illinois, has just been formed. The club plans to hold two meetings each month. LeRoy F. Wise has been named president, and E. O. Wise, secretary.

Los Angeles Cinema Club

The October meeting of the Los Angeles Cinema Club proved to be one of the most interesting in the history of the club, due to the screening of 2000 feet of Kodachrome, made by Mrs. Hoyt Mitchell of Los Angeles. Mrs. Mitchell was touring Europe just before the present war broke out in 1939. She made beautiful pictures of the Mediterranean and North Africa areas as well as pictures of Norway and France. She took her last picture in Europe the day before war was declared. Those pictures were right along the German border where our troops are fighting today. Mrs. Mitchell gave a brilliant commentary as the film was screened.

Guy Haselton screened a very beautiful Kodachrome subject called, "Canadian Rockies, and Blooming Desert."

M.M.P.C.

"The Birth of St. Mary's," photographed by Robert Gowen of Ossining, N. Y., was the highlight of the October meeting of the Metropolitan Motion Picture Club of New York City. This film was judged one of the Best Ten in 1938, and describes how a town planned the building of a church, and how the plans were executed.

Also on the program were "Moloch of Erebus," a Kodachrome subject made by Mr. Gowen, and "Backyard Victory Garden," by F. Clark Tufaro. It shows how a flower garden was transferred into a victory garden. Scenes of the club picnic were also shown.

San Francisco Club

Three unusual films featured the October meeting of the Cinema Club of San Francisco, held at the Women's City Club. They were: "Lassen Volcanic National Park" and "Exotic Flowers of Santa Barbara", both by Leon Gagne, and an interesting film in color of the recent Marin County Horse Show.

The horse show film was made by a combination of four members of the club, and clearly demonstrated the kind of team work required in filming an event of character by photographers working from different locations.

Philadelphia Cinema Club

Four films, quite different from those usually shown at amateur club meetings, made up an interesting program for the October meeting of the Philadelphia Cinema Club. The films were: "Among the Silk Route," "News of the Air," "Tarawa", and "Your Ships in Action." The program made a distinct impression on the club members.

Saint Louis Club

Cinematographic highlight of the October meeting of the Amateur Motion Picture Club of St. Louis was the Kodachrome film, "Close-Ups", by Werner Henze. This film was made up from a series of random shots Mr. Henze has made of flowers, insects and animals over the last four years. It proved beyond a doubt the value of close-ups in the making of motion pictures.

Also on the program were two films made by Mrs. W. C. S. Becker. They were "Movie Vacation Trip to Yellowstone National Park", and "San Francisco's World's Fair 1939-40." Both were excellent subjects. As the closing feature of the meeting, Lon Wadman gave an interesting talk on how to arrange shooting scripts.

La Casa Club

Capacity crowds continue to be the rule at the meeting of the La Casa Movie Club of Alhambra, California. More than 200 attended the October meeting at which four films were screened. The pictures shown were:

"Rambling Around the Southwest" by John Cook; "All Aboard for Rochester" by John F. Clay; "A Florida Holiday" by James R. Hornaday; and "Mexico" by C. L. Lefiell. Preceding the meeting, close to 100 members met for dinner.

Washington Club

At its October meeting the Washington Society of Amateur Cinematographers opened its meeting with the screening of an up-to-the-minute newsreel. This was followed by an 8 mm feature of unusual excellence, "City of Destiny," photographed by Theodore Sarchin. Theodore Huff, film consultant and critic for the Washington Workshop, gave a short talk, and the meeting concluded with a general discussion.

THE recent theft of thousands of dollars worth of photographic equipment from the home of Len H. Roos, A.S.C., should move owners of cameras and camera equipment to have all such equipment insured against theft. Mr. Roos had no insurance on his equipment, so unless it is recovered he will take a huge loss. In his case the reason he had no insurance was because he was waiting for the arrival of more equipment from the South Pacific where he had been a war newsreel correspondent.

But in the case of hundreds of owners of expensive equipment it is negligence. They think no one will steal their cameras. Don't take that chance. Get insurance today on all your equipment and be safe.



A combat cameraman of the U. S. Army Air Forces was decorated for his part in the first Ploesti oil field raid.

They're flying...fighting... behind a movie camera

ARM Y Air Forces Combat Camera Units are making a superb motion-picture record of the air war on the fronts all over the world. Naturally, many men from the motion picture industry have become combat photographers.

Many more make up—in large part—the First Motion Picture Unit, the training branch of the AAF Motion Picture Services. This unit has two main functions: making training films which help turn out in a hurry thousands of expert pilots, navigators, armorers, and mechanics; and the intensive coaching of hundreds of motion-picture photographers who make up the Combat Camera Units.

And the cameramen do not work alone. They are supported by a host of writers, cutters, sound and music editors, laboratory and other technicians.

There isn't space for a tenth of the story, but the net of it is that the motion-picture industry has reason to be proud of its share in the pictorial record of our Army Air Forces.



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Filming in the Snow

By GLENN R. KERSHNER, A.S.C.

THROUGHOUT the ages poets have painted word pictures of the beauty of winter snow, but I feel sure that, beautiful as many of their poems have been, they never can be as beautiful as the motion pictures which can be made of delightful snow scenes. Every home movie maker has at his command the tool that can make a lasting record of winter. Winter with all its grandeur . . . snow storms . . . frosted house tops . . . frosted windows . . . frozen rivers and lakes.

The very thought of the many charming scenes makes a camera enthusiast thrill with the thought of pointing his camera toward white blanketed fields that sweep on to the horizon, with here and there a snow capped fence, a lonely barn or a grotesque leafless tree that casts a picturesquely shadow on the snow. Yes, winter holds much for the amateur movie maker.

In looking through my old diaries when I was a newsreel photographer, I find that November usually found me working my way north toward the New England states, Colorado or Canada to capture the first big snow storms. The public like them on the screen.

I'm sure you 16mm and 8mm owners are looking forward as much as I did for the first big snow storm. So, be sure that your cameras are well cleaned and oiled. Redress your camera cases so they will resist melting snow and water. Take a mixture of linseed oil and turpentine, half and half, and heat it. Then with a small brush, paint the legs of your tripod. This will preserve them and prevent them from swelling and sticking. It also is a good idea to saddle soap your camera carrier straps.

No doubt your camera cases have had quite a bit of rough handling in the summer, and considerable dirt and dust has gathered on the lining. Make it a point to give the cases a good cleaning, and glue fast any torn lining. With everything in shipshape, you are now ready for winter filming.

Winter, with its snow and ice, has always fascinated me, whether it was ice covered falls of Niagara, sled races in Canada, or frost covered trees in the Yosemite. However, I was never satisfied with my snow pictures until I went to the Arctic with the Donald B. Mac-Millan Expedition. I used multicolor film on that trip, and after months in that region we brought back forty thousand feet of color film. The color I used was a bi-pack, and it was beautiful.

Right now I wish to say that if you are using Kodachrome for your snow shooting you do not need to worry about filters. If properly exposed you will get excellent pictures. But if you are using black-and-white film, then you better watch your filters.

As a rule, filters for amateurs are composed of four kinds: red, green and two ambers. They are designated as either two time or four time filters, and sometimes the designation is preceded by the letter "P," which means the filter is corrected for panchromatic film. These filters have been simplified so that amateurs will know that when using a two-time it requires one more stop for light, and two stops for the four time.

Very often included in an amateur's kit are the two filters, Coral-pink and the blue. These are to be used with the two types of Kodachrome film. The

Coral-pink is used when shooting interior Kodachrome, Type A, outside in sunlight. The blue filter is used when shooting regular Kodachrome under artificial light.

To the advanced amateur all of the professional filters are available for use with the 16mm equipment. Several types of sunshades and mat-boxes are available for those who wish to use the professional filters.

If you are using black-and-white panchromatic film for snow scenes, and wish to use the same kinds of filters the professional uses, you should carry the following: Aero No. 1 and No. 2, 15-G, 23A, 56B and 50% Neutral. Some of these are used separately, and some in combinations. First, let me explain what each filter will do, and then give the filter factor and how many stops to open from normal. In other words, should you select F16 as your normal stop and you wish to darken the sky for cloud effects, you select the 23A filter, a red filter with a factor of 4, which will mean that you have to open the lens 2 stops more for the full exposure. Then you would open the diaphragm up to F8.

The Aero 1, very light amber, has a slight color correction for all types of Panchromatic films; produces slight contrast, penetrates slight haze and helps to snap up faces. It has a factor of 1.25, so open one-fourth more stop.

Aero 2, light amber, Normal correction for all types of Panchromatic film. It produces medium contrast, darkens blue sky a few shades, brings out clouds and penetrates haze deeper than Aero 1. Factor is 1.50. Open lens one-half stop more.

15G, yellow. Full color correction, produces more contrast than Aero 2. and is very good on open landscapes. It darkens the sky a little, bringing out the clouds. It lightens all yellows, orange and red, and slightly lightens green and magenta colors. The factor is 3, so open lens 1½ stops more than normal.

(Continued on Page 387)

Tested in a Worldwide Laboratory

On far-spread fighting fronts Ampro 16 mm. sound projectors have been subjected to the most rigorous tests ever devised. As an integral part of the training and entertainment equipment of the armed services, these machines have had to stand steaming, corroding humidity—freezing, sub-zero temperatures—dust storms and jarring vibrations—plus day after day operation with a minimum of service facilities.

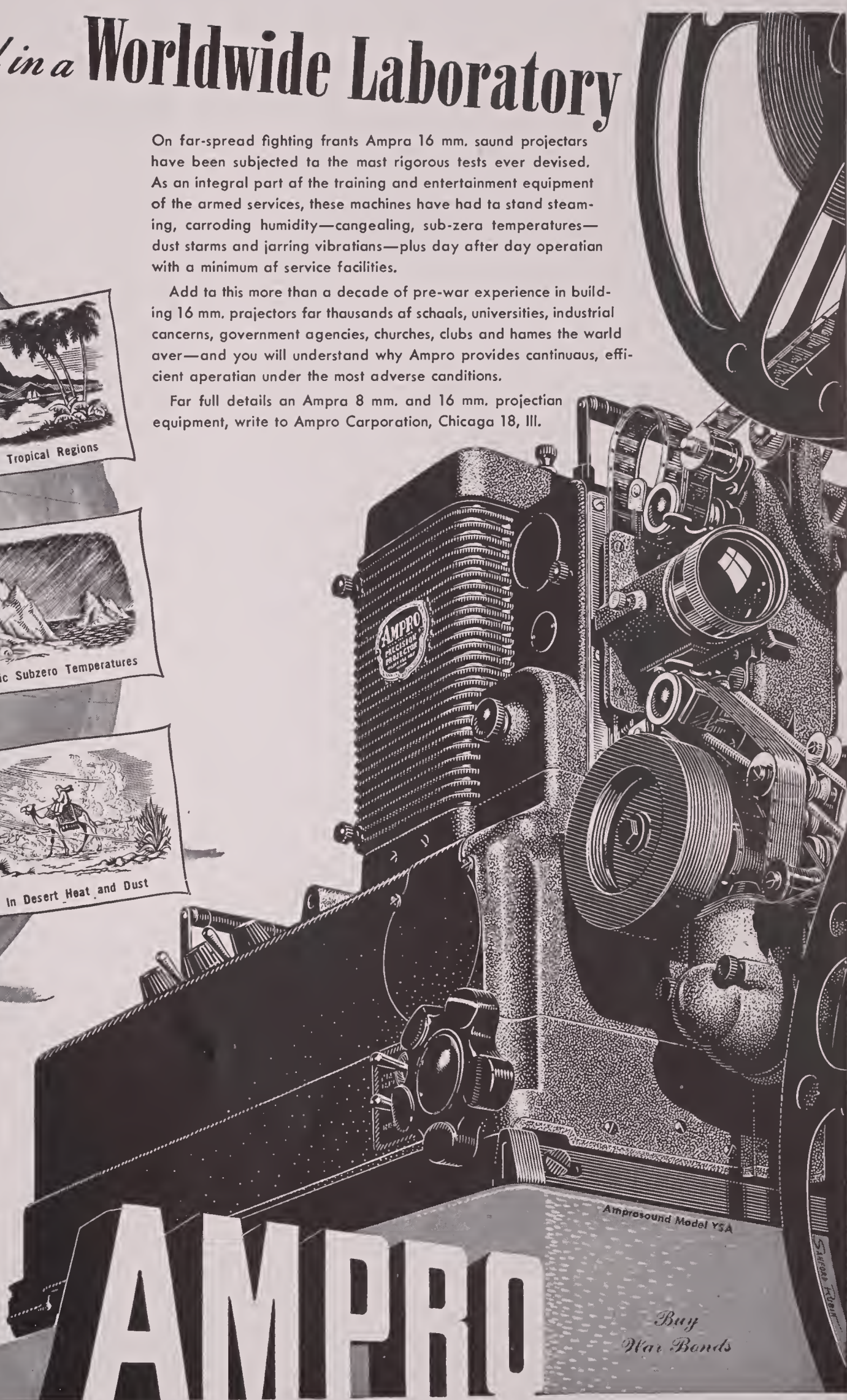
Add to this more than a decade of pre-war experience in building 16 mm. projectors for thousands of schools, universities, industrial concerns, government agencies, churches, clubs and homes the world over—and you will understand why Ampro provides continuous, efficient operation under the most adverse conditions.

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New Theatrical-Television Firm Being Organized

GEORGE A. HIRLIMAN has announced that he, in association with a group headed by Eliot Hyman, President of Microstat Corporation, are organizing International Theatrical and Television Corporation with a contemplated capital basis of \$1,000,000 in common stock and \$5,000,000 in preferred stock.

The activities of the Corporation will be centered around the post-war development and expansion of the 16 mm industry. Negotiations with General Aircraft Equipment Company for the manufacture of 16 mm projectors and tele-

vision equipment are now in the process of completion. Circle Film Laboratories will be affiliated with the new company for the express purpose of handling the new company's laboratory printing.

It is not only the plan, but the announced purpose of International Theatrical and Television Corporation to develop the 16 mm field to its widest potentialities and to augment it by eventually tying in the practical application of television as well. The importance of the new organization is manifested in the fact that it will be able to manufacture and market, at moderate prices, its own 16 mm projector and television equipment in four different models, ranging from home to auditorium use.

J. Harold Booth



BELL & HOWELL COMPANY, pioneer in its field in motion picture equipment, with the appointment of J. Harold Booth as Vice President in Charge of Merchandising, takes another step forward in postwar planning.

Although currently engaged almost entirely in war production, and not losing sight for a moment of the importance of continuing an uninterrupted flow of supplies to the armed forces, Bell & Howell nevertheless realizes the necessity for planning now to insure continued employment during the reconversion period ahead. Mr. Booth's 16 years with the Company, in engineering, sales, and executive capacities, will fit him for his new responsibilities, and under his recognized and able guidance plans are already emerging from the formative stages into a working design for postwar merchandising.

Call to Arms for the Dutch

A film has been produced to be used in Holland—when that country is liberated—to recruit men for the allied offensive against Japan. It was previewed in Melbourne on September 14. Made under the auspices of the Netherlands Indies Government Information Service, the picture will be shown throughout liberated Holland under the title, "Indie Roept"—(The Indies are Calling). It appeals to Dutchmen to remember the heroism and sacrifices of the Netherlands forces that opposed the Japanese in 1942. Commentary is by the Dutch broadcaster, Onno Liebert.

Included in the film are a number of action shots of the guerrilla fighting on Timor Island culminating in scenes showing some of these veterans of the Timor campaign back in action with the allied troops that liberated Netherlands New Guinea.

Filming In The Snow

(Continued from Page 384)

23A, light red. Medium overcorrection, darkens blue sky and water for light night effects. Lightens the face, darkens greens slightly and lightens anything red or yellow. It has a factor of 4, so open lens 2 stops more.

56B, green. Has strong softening effect, and produces great green and yellow contrast. Factor of 5. Open lens $2\frac{1}{4}$ stops more. This is a very good filter to use on landscapes and snow, providing you can miss the sky as much as possible.

50% N.D. (Neutral). Medium contrast neutralizer; medium softening of glare and contrasts; medium exposure compensator (instead of stopping down lens). Factor of 3. Open $1\frac{1}{2}$ stops.

To darken the sky, bring out the clouds and lighten faces, as well as soften up the white of the snow and the shadows, we combine the 23A and 56B, making a combined factor of 9, so you should open the lens 3 full stops more than your normal reading. For a night effect (in sunlight) stopped down $1\frac{1}{2}$ stops. Or, in other words, open up only $1\frac{1}{2}$ stops above normal.

5N5 is a combination of Aero 2 and a 50% Neutral (N.D.) which gives medium color correction without excessive contrasts. It softens strong glare and contrasts. This is an excellent filter combination to use on snow, and strong contrasts with heavy shadows, and gives very pleasing values when used on open water scenes. Factor of 5, open $2\frac{1}{4}$ stops.

3N5 is a combination of Aero 1 and a 50% Neutral (N.D.). The Aero 1 slightly corrects the sky (clear blue sky), while the neutral lightly softens the whites. A very good combination. Factor of 4, open lens two more stops over normal.

These filters, I am sure, will give you very pleasing results with snow scenes. Quite naturally, you will have to study what each filter will do in its corrections, and then by studying the subject to be photographed you will soon learn what filter to use for your desired results. Of course, if you should wish to turn your snow scene into a night shot, allowing the faces and all red clothing, etc., to turn white as if it were moonlight, you can use a 29F filter. This is a very deep, red filter with extreme over-corrections giving an extreme contrast. It turns blue sky and water to a strong black, and should you wish to make medium shots and close-ups with it, you would have to use a special make-up with deep brown lips. However, in the closeups you should switch to a much lighter filter. Factor is 15, so open $3\frac{3}{4}$ stops from normal.

Last month I wrote about miniatures. Well, you can use miniature technique to enhance the value of some of your snow scenes. For example, if you would like to have icicles hanging from a window or the edge of a porch you can easily fix them up by using water-glass



Official British Battle Photographer with his DEVRY 35mm. Camera



DEVRY 16mm. Camera

WHEREVER the fighting has been the thickest . . . wherever Allied arms have met their severest trials under fire . . . there DEVRY motion picture cameras have been found . . . doggedly grinding away to record the changing tides of battle . . . in living action and unforgettable sound.

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2. and its successor, "TUNISIAN VICTORY"

. . . and DEVRY cameras . . . "manned" by the survivors of a hundred campaigns are still busy on a dozen fronts . . . preserving for posterity, in unchallengeable action, the relentless march of Allied arms toward Berlin and Tokyo in the final chapters of the greatest conflict in the history of mankind.

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DeVRY alone among motion picture equipment manufacturers has received the Army-Navy Excellence award three consecutive times.



(the stuff we used to store eggs in). Mix this water-glass very thick, and with a spoon drip it onto the window ledge, tree branch, or whatever you wish, and there you will have perfect icicles. Try it sometime. If the weather is thawing and you want the icicles to be dripping water, just throw a little water on them and they will drip.

I hope the advice I have given will be of assistance to some of you readers. It won't be long until Christmas, so perhaps you had better begin to think about your Christmas Day filming. In the December issue I shall discuss Christmas tree photography, giving a few suggestions as to angles, etc.

Ampere the Rate of Flow

The term ampere—the word used to express the rate of flow of electricity along a wire just as the term gallons per minute expresses the rate of flow of water through a pipe—was derived from the name Andre Ampere, French mathematician.

Fifty-four million cubic feet of coke oven gas are produced daily, for its own consumption, by the Rouge plant of the Ford Motor Company. That is enough to supply Detroit and its suburbs for 12 hours, and is in addition to similiary quantities of blast furnace gas produced.

Reproduction of Color Sound Film

(Continued from Page 371)

a spectral distribution in the blue and violet part of the visible spectral region, is fulfilled not only by potassium oxide cells, which were studied mainly by Kluge,⁸ but also by potassium hydride cells, studied by Elster and Geitel.⁹ With respect to the total photoelectric sensitivity, however, even potassium oxide cells are not satisfactory.

It was therefore natural to adapt the caesium-antimony alloy cathode (Cs, Sb)¹⁰ to meet the requirements of sound reproduction. This layer possesses high absolute sensitivity in addition to the desired spectral distribution (the long-wave maximum of sensitivity lies between 430 and 460 mμ). This is shown in Fig. 4. In this figure the product of $V_{\lambda}S_{\lambda}$ is plotted against wave length λ for the caesium oxide layer and also for the Cs, Sb layer. The integral

$$I_{ph} = c \int V_{\lambda} S_{\lambda} d\lambda$$

gives the photoelectric current expected from the spectral distribution V_{λ} and the energy distribution of the light source with known color temperature S_{λ} . Simultaneously, Fig 4 gives the thermoelectric current which must be measured for the reduction of data to the same incident energy.¹¹ Practical workers will be interested to know that it has been possible to make gas-filled photoelectric cells with Cs, Sb layer in production which, when measured in the light of a normal sound lamp heated with 4.5 amp, have a sensitivity of 250 μA/Lm, which is similar to that of gas-filled caesium oxide cells. This indicates that the Cs, Sb cell can be used for the reproduction of a colored sound track as well as for the silver track, and therefore, has a great advantage over caesium oxide cells. It is to be expected that further investigations will show the way to make cells with still higher sensitivities.

The maximum of the spectral distribution may be shifted toward the red by about 100 mμ by sensitization with oxygen. Therefore, considerable specific adaptation to the spectral characteristics of any given film is possible. It will be of interest here to mention that even Schinzel's suggestion,² the use of a white sensitive cell, can be carried out practically. By combination of a transparent Cs, Sb layer with a caesium oxide layer¹² in one cell, a photocell can be made which has a uniform sensitivity over the entire visible spectrum up to the near infrared. However, this cell may be expensive, because its preparation requires the use of 3 different sensitization methods.

In spite of a multitude of publications,⁷ it is not yet clear in all details what causes the great quantum efficiency of the Cs, Sb layers (maximum quantum

efficiency of 30 per cent in comparison with 1 per cent with caesium oxide cathodes). It seems that the electrons are liberated in a polyatomic layer of an alloy Cs and Sb, whereby a fixed relation between both alloy components is necessary for the best results. In order to reduce the work function, a single-atomic Cs layer must be present on the surface of the alloy.

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Television to Revolutionize Future Selling Methods

THE ability of television to demonstrate a product will revolutionize merchandising methods, according to Jack A. Miller, Advertising and Sales Promotion Manager of the Standard Oil Company of New Jersey, speaking at the Television Seminar of the Radio Executive Club in New York. Another guest speaker was Carlos Franco, Manager of the Station Relations Department of the Young and Rubicam advertising agency.

"Like a lot of people in this war," Mr. Miller said, "television and the science of electronics have grown up fast. When peace is declared, television will be a force—a merchandising force—that must be recognized."

Mr. Miller illustrated by means of motion pictures how his company, the first to place a contract for a commercially sponsored series of programs prepared especially for television, has sold products and ideas by video broadcasting. In a demonstration of the making of synthetic rubber, Mr. Miller showed how interest and understanding of an advertising message can be doubled by television. He also explained how buyer confidence and desire can be built up by television demonstrations of a product.

40 Tubes in Television Set

In some radio-television sets, there are as many as forty electronic tubes.



Churchmen obtain experience in operating Filmosound projectors at national visual education school operated by International Council of Religious Education

Church Interest Grows in Movies

Church workers have long been interested in motion picture matters, though all too often their concern was a negative one, aimed at checking undesirable films in nearby theatres. Of late this interest has become more and more positive, and there are now so many prominent religious workers who use motion pictures in various phases of church work that the International Council of Religious Education recently conducted a summer school for visual education specialists. The course was attended by nearly 200 students from all parts of the United States. It was held at North Park College, Chicago, and lasted a week.

Besides utilization courses at various age levels, and work in the making of still photographs, there was a course on motion picture writing and production, conducted jointly by Rev. Wm. L. Rogers of the Religious Film Association and Wm. F. Kruse, manager of the Bell & Howell Films Division. A projection class was conducted by W. A. Moen, of the Bell & Howell Educational Division.

Photographic dealers have long been aware of the business possibilities of the church field, not alone in the form of direct sales to churches and other religious institutions but also in that of additional business done with laymen active both as amateur photographers and as church workers. This nationwide conference, which will be followed by many similar gatherings on a local scale, will stimulate church demand for film and photographic services.

Eight Million See Mine Bureau Films

THE free educational motion pictures of the Bureau of Mines were given almost 100,000 showings during 1943 before war training classes, Army and Navy personnel, engineering and scientific societies, schools, colleges, civic groups, and other organizations, according to a year-end report, just submitted to Secretary of the Interior Harold L. Ickes by Dr. R. R. Sayers, Director of the Bureau.

The gross attendance—nearly 8,000,000 persons—was slightly under the previous year, Dr. Sayers said, but the

Aces of the Camera

(Continued from Page 367)

Working under Pomeroy his first assignment was "The Ten Commandments," with the famous trick effect of the opening and closing of the Red Sea. Their joint success resulted in their working as a team. Together they developed a camera with which it was possible to take two identical negatives at the same time for the purpose of optically printing people on previously filmed backgrounds; thus anticipating the rear projection methods of today.

Rolla also helped in the early development of the Pomeroy Transparency Process which utilized a blue transparency image in front of the negative in the camera with the actors being photographed against a red background; a technical achievement in its day which foreshadowed many of the contemporary advances in process photography.

In 1924 he designed and built the first optical printer for the Paramount Studios, and with an eye for the smaller details as well as the big projects, invented, manufactured and sold a cap to fit over film magazine traps to eliminate the dirt hazard.

In 1928, when 20th Century Fox was the Fox Film Corp. they made a bid for the services of this enterprising and inventive technician, inviting him to come over and start an optical printing department for them. He has been there ever since.

During the intervening years he has grown with the industry, and is still experimenting and inventing the things that will make the motion picture of tomorrow as superior to the product of today as that of today is to yesterday's. He generates a feeling of confidence. The technical future of the industry is safe in the hands of such men.

One of his most spectacular effects in recent years was the sequence in "Footlight Serenade" in which Betty Grable danced and shadowboxed with her own immense shadow, which then stepped down from the screen behind her to conclude the number beside her. Rolla designed and directed the sequence, which he had to sell to a front office dubious of its technical probabilities, and then printed it on the special printer he had designed and built for such intricate split-screen and composite work.

Two or three years ago, for a picture entitled "Earthbound," starring Warner Baxter, he invented a device that makes possible the shooting of ghost images at the same time as the main action. In other words, no double printing is necessary, the actors are arranged on the set, the camera trained on them, and at the same time the "ghost" performs against black velvet off to the side. With this device it is possible to make pan shots and dolly shots, and in addition, it is unnecessary for the actor playing the ghost to transpose action intended

for his right hand to his left hand, and visa versa. As a picture "Earthbound" was not what could be called a howling success, but as an achievement in technical effects it was a masterpiece and with seventy-five per cent of the picture being concerned with ghost images it can be readily seen that Rolla's special ghost catching device brought the picture in on schedule and within the budget.

The grand finale of "The Gang's All Here," with its kaleidoscopic colors and images, water curtain and floating faces is another spectacular achievement that can be chalked up to Fox's amazing "Director of Montages and Optical Effects." And yet he does not strive for the obviously spectacular. If it has to be done, he can usually figure out a way to do it. But he is more concerned with harnessing the science of special effects and trick photography to the broader purposes of making the motion picture a distinct medium, improving the product, and by a more general application of the principles of his special science making the problems of film production more simple and less expensive.

Early-Day Electric Meter

An early type of "alternating current meter," designed in 1887, made use of a paper spiral to indicate current consumption.



A scene from "Get Going", a Bell and Howell Filmosound Library release.

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Roos to Telefilm

Len Roos, veteran newsreel cameraman, lately war correspondent and member of A.S.C. has recently returned to civilian life and has been appointed by Telefilm Studios to act as Director of Photography, specializing in 16mm Kodachrome. Roos has had a wide and varied career in the newsreel field and has traveled in practically every country of the world. His pictures of December 7, 1941, at Honolulu were the first to be released in this country through Life Magazine. They described the holocaust of the City of Honolulu, Bellows and Hickham Field. Since December 7, 1941, Roos has been either in or in the vicinity of every major engagement fought in the Pacific and just previous to the Japanese attack of Pearl Harbor, established a film laboratory for the Dutch Government in Java.



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THIS fan shaped instrument is a lens collimator, especially designed by Fairchild Camera & Instrument Corporation engineers for the final testing of Fairchild aircraft camera lenses, after installation in the cameras. Installed in the company's plant at Jamaica, N. Y., its purpose is to give a photographic record of the resolving power of each lens, for correct focusing. Other tests, on other devices, are made, of course, before installation of lenses in the cameras.

A Fairchild model K-18 9" x 18" camera, with a 24-inch focal length lens, used by both the Army and Navy in military photography from the air, is shown mounted for testing. The two outer collimator tubes, each including a lens and an illuminated chart showing perpendicular reticle lines, swing out to cover the edge of the field of the lens, a matter that has often been neglected in ordinary focusing tests. The middle collimator tube, similarly equipped, covers the

center of the field. The entire collimator, focused at infinity, transmits parallel rays of light to the camera lens for photographing on a test negative. Simultaneously, a small recording collimator, set atop the middle tube, records the serial number of the lens on the film. By means of this accumulated data on the negative the operator not only can determine the sharpness of detail covering the entire angle of view, but he can check any possible error from zero, and gauge the length of any such error.

New Filmosound Library Releases Announced

GET GOING (Universal)

No. 2548

6 reels

The housing shortage is only one of the hilarious aspects of this gay comedy of Washington's women in wartime, featuring Grace McDonald and Robert Paige. Available from December 25, for approved non-theatrical audiences.

THE LIFE OF THE ANT

No. 5800

1 reel

New nature-study sound film presents full life-cycle from egg to maturity. Remarkable microscopic photography shows development of embryo, and, later, details of jaws, legs, and other parts. Building and defense of homes, foraging, care of young and many other details well shown.

ALL BY MYSELF (Universal)

No. 2577

6 reels

Pleasant modern comedy with musical interludes. Two men, and an advertising agency, with a career girl in love with one man and pretending to be married to the other. (Rosemary Lane, Evelyn Ankers, Patric Knowles, Neil Hamilton). Available from December 11, for approved non-theatrical audiences.

RENTALS SALES SERVICE

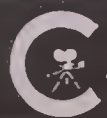
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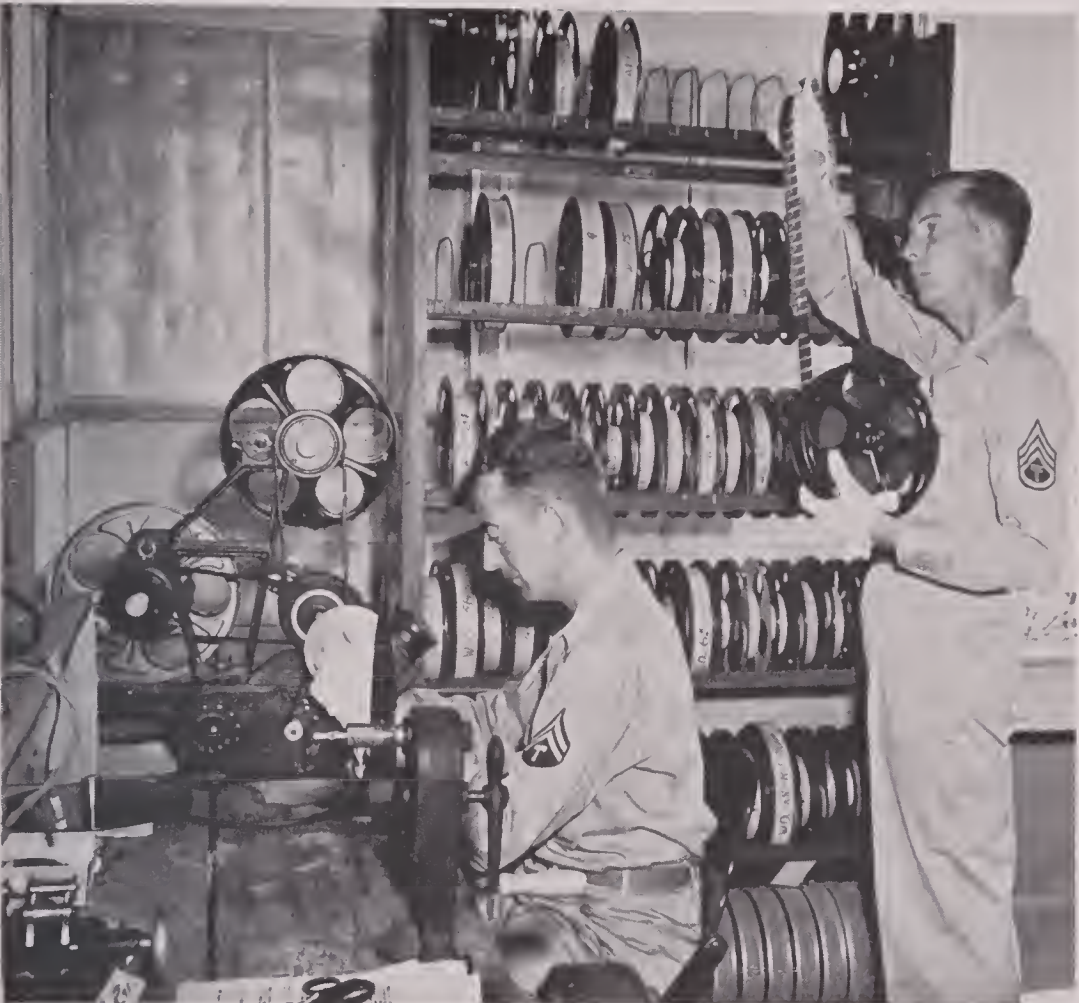
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Army Laboratory Unit Gets New Name

THE 4th Signal Photographic Laboratory Unit, made up principally of enlisted reservists from the motion picture studios, now serving on New Caledonia, has been recently re-named by the War Department and will henceforth be known as the 4th Signal Service Unit (Photographic Laboratory).

Principal activity of the unit at present is production of a training film outlining various strategies and tactics of U. S. Army troops in the South Pacific. Production, to be made up from combat film shot during active fighting, with animation sequences and off-stage sound effects and dialogue recorded in the field, is being edited by M/Sgt. Malcolm C. Bulloch, formerly of Paramount studio, from a script written by T/3 Elmer L. Whiles, formerly of Warner Brothers, with animation sequences directed and drawn by Sgt. Philip de Lara, formerly of Leon Schlessinger Studios.

Overall production is under the direction of Major Gordon S. Mitchell, Commanding Officer of the Unit and formerly Manager of the Research Council of the Academy of Motion Picture Arts and Sciences.

England Saw the Light

On the most important uses of electricity was made in England in 1858. An arc lamp was placed in the South Foreland Lighthouse to guide the mariners in the stormy English channel.

M/Sgt. Malcolm C. Bulloch (standing), and T/5 Rickey S. Daniels, at work in the editing room of the 4th Signal Service Unit in the South Pacific. Both men are from Hollywood's film industry. Photo by Sgt. F. L. Reed.

New Educational Film Group Formed

Educational Film Producers' Association, New York City, a new production group in the educational film field, has just announced its incorporation.

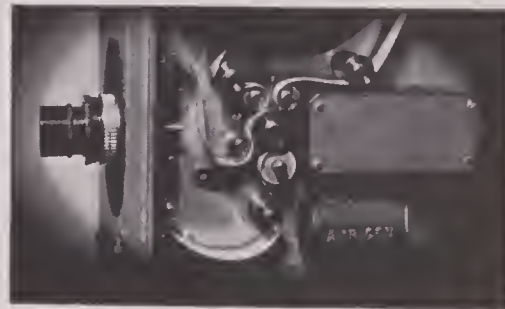
Purposes of the Association as announced are: "To advance the study, understanding, and appreciation of educational, instructional and informative motion pictures; to foster, encourage, and promote the production and distribution of such motion pictures and to provide a clearing house for information pertaining to educational films."

Officers of Educational Film Producers' Association are: President, Fletcher Smith, Fletcher Smith Studios; Vice President, Max Lasky, Films of Industry; Secretary, John Flory, Grant, Flory and Williams, producers; Treasurer, Elda Hartley, Hartley Productions; and Chairman of the Executive Committee, Emerson Yorke, Emerson Yorke Studio.

In addition to the foregoing officers, charter members include Julien Bryan, Julien Bryan Pictures; Herbert Kerkow, Kerkow Productions, Inc.; John McCrory, Knowledge Builders; Clarence Schmidt, Spot Film Productions, Inc.; Ralph Schoolman, scenarist; C. O. Welch, Welch Productions; and Elizabeth Harding, Educational Film Library Association.

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Technical Papers

Presented at S.M.P.E. Meet

An interesting list of papers were presented at the 56th Semi-Annual Technical Conference of the Society of Motion Picture Engineers, held in New York October 16-18. Following is the partial list:

"Practical Utilization of Monopack Film," by Charles G. Clarke, A.S.C., Twentieth Century-Fox Film Corp., Beverly Hills, Calif.

"The Application of the Polarograph to the Analysis of Photographic Fixing Baths," by Vaughn C. Shaner and Mary R. Sparks, Eastman Kodak Co., Hollywood, Calif.

"Color Densitometry and Its Application to Modern Multilayer Color Films," by Monroe H. Sweet, Ansco, Binghamton, N. Y.

"Two New Eastman Fine-Grain Sound Recording Films," by R. M. Corbin and N. L. Simons, Eastman Kodak Co., Hollywood, and D. E. Hyndman, Eastman Kodak Co., New York.

"Comparison of Variable-Area Sound Recording Films," by Dorothy O'Dea, Radio Corporation of America, Hollywood, Calif.

"A Push-Pull FM Circuit and Its Application to Vibratory Systems," by Alexis Badmaieff, Radio Corporation of America, Hollywood, Calif.

"FM Calibrator for Dick Recording Heads," by H. E. Roys, Radio Corporation of America, Indianapolis, Ind.

"Wave Propagation and Outdoor Field Tests," by F. L. Nopper and R. C. Moody, Electrical Research Products Division of Western Electric Co., Hollywood, Calif.

"Organization of Committees on Engineering of the SMPE," by D. E. Hyndman, Engineering Vice-President, Society of Motion Picture Engineers, New York.

"Projection Television," by Dr. D. W. Epstein, RCA Laboratories, Princeton, N. J., and Dr. I. G. Maloff, Radio Corporation of America, Camden, N. J.

"Application of Sound Recording Techniques to Airplane Vibration Analysis," by J. C. Davidson and J. G. Frayne, Electrical Research Products Division of Western Electric Co., Hollywood, Calif.

"Airplane Vibration Recorder," by G. R. Crane and J. C. Davidson, Electrical Research Products Division of Western Electric Co., Hollywood, Calif.

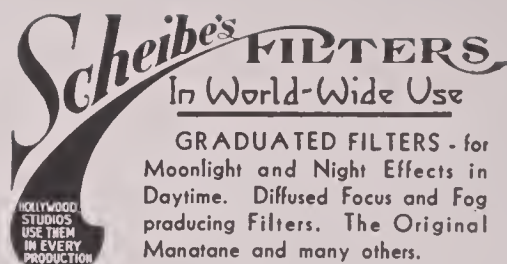
"Airplane Vibration Reproducer," by G. R. Crane, Electrical Research Products Division of Western Electric Co., Hollywood, Calif.

"The Future of the 16mm. Industry," by J. A. Maurer, J. A. Maurer, Inc., New York.

"An Automatic Mercury Control Circuit," by Hanovia Chemical and Manufacturing Co., Newark, N. J.

"Methods for Measurement of Brightness of Carbon Arcs," by M. P. Jones, R. J. Zavesky, and W. W. Lozier, National Carbon Co., Fostoria, Ohio.

"Study of Radiant Energy at Motion Picture Film Aperture," by R. J. Zavesky, M. R. Null, and W. W. Lozier, National Carbon Co., Fostoria, Ohio.



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Of The American Cinematographer, published monthly at Los Angeles, California, for October 1st, 1944.

State of California }
County of Los Angeles } ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Hal Hall, who, having been duly sworn according to law, deposes and says that he is the Editor of the AMERICAN CINEMATOGRAPHER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, A.S.C. Agency, Inc., 1782 No. Orange Drive, Hollywood 28, Calif.; Editor, Hal Hall, 1782 No. Orange Drive, Hollywood 28, Calif.; Managing Editor, Hal Hall, 1782 No. Orange Drive, Hollywood 28, Calif.; Business Manager, Marguerite Duerr, 1782 No. Orange Drive, Hollywood 28, Calif.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) A.S.C. Agency, Inc., 1782 No. Orange Drive, Hollywood 28, Calif., a non-profit corporation wholly owned by the American Society of Cinematographers, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Officers of the American Society of Cinematographers, Inc., are: President, Leonard Smith, 1782 N. Orange Dr., Hollywood 28, Calif.; First Vice-President, Joseph Walker, 1782 N. Orange Dr., Hollywood 28, Calif.; Second Vice-President, Leon Shamroy, 1782 N. Orange Dr., Hollywood 28, Calif.; Third Vice-President, Charles T. Clarke, 1782 N. Orange Dr., Hollywood 28, Calif.; Secretary, Byron Haskin, 1782 N. Orange Dr., Hollywood 28, Calif.; Executive Vice-President, Treasurer and Business Manager, Fred W. Jackman, 1782 N. Orange Dr., Hollywood 28, Calif.

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5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve month preceding the date shown above is..... (This information is required from daily publications only.)

(Signed) HAL HALL, Editor.

Sworn to and subscribed before me this 30th day of September, 1944.

(Seal)

G. HAGAN, N. P.

Notary Public in and for the County of Los Angeles, State of California.

(My commission expires July 31, 1945.)

Who Can Judge?

(Continued from Page 374)

Personality will unfold and come to the surface in the pictures of the photo-enthusiast, and that is why so many kinds of pictures pass in review; good ones that can be bad ones and bad ones that can be good ones.

Criticism, good or bad, especially bad, has never killed a really good picture; the one that tells something.

The more an individual tries to impress somebody with his own expertness of opinion the more damaging his criticism can be to the sensitiveness of the one whose picture is criticised. But the criticism of the honest individual is worth analyzing whenever it is offered, for such criticism comes from the soul. It is not the kind of criticism that hurts, because it is constructive.

A very wise bard once wrote: "There is nothing good or bad, but thinking makes it so."

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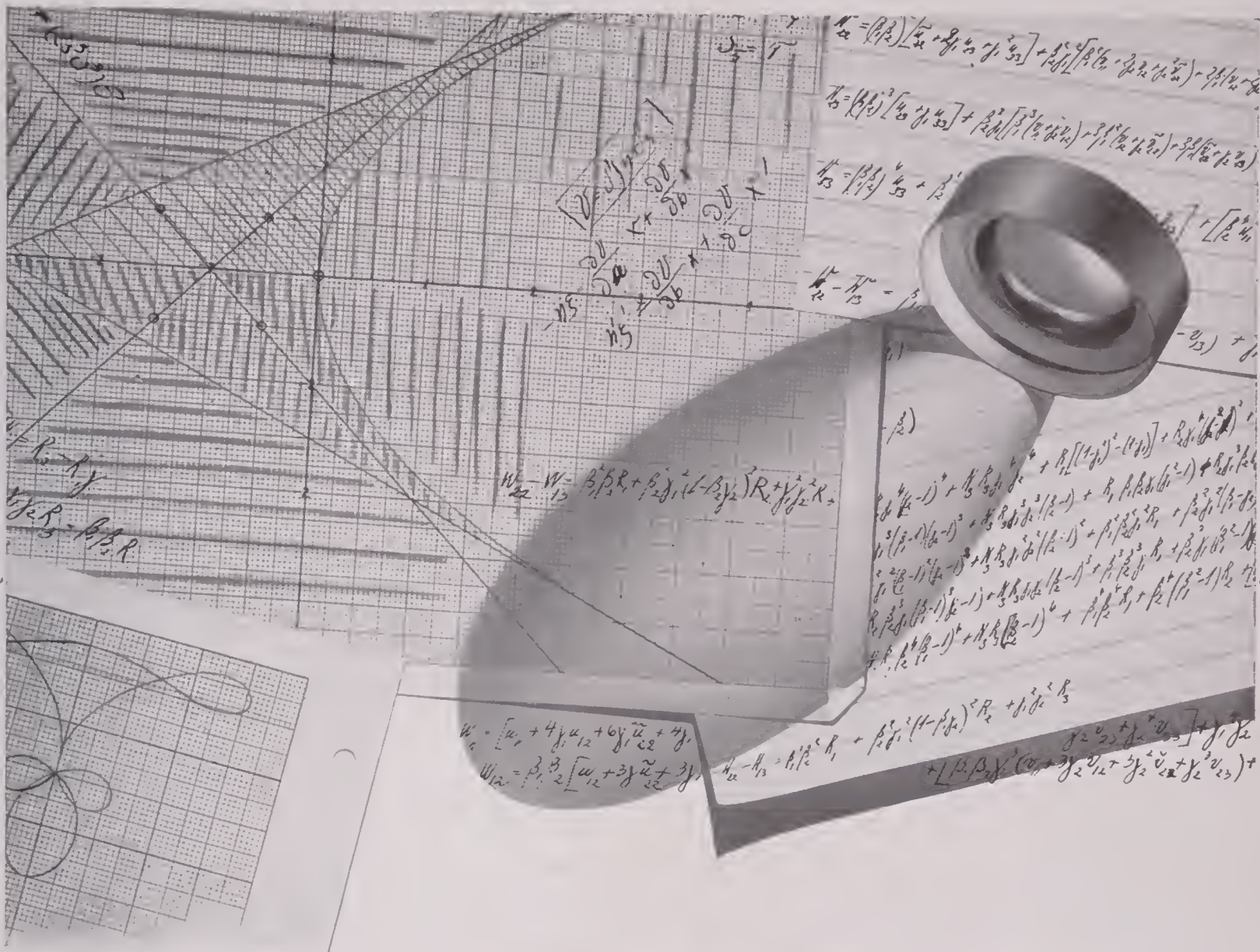
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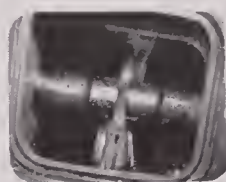
At Kodak, all these are distinctive. Everything which goes into a fine camera lens is designed and made. That includes not only entire optical assemblies... but, for many lens elements, the optical glass itself.

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method of making glass without sand... as revolutionary as learning to make steel without iron. This new rare-element glass has a much higher refractive index without marked increase in dispersion.

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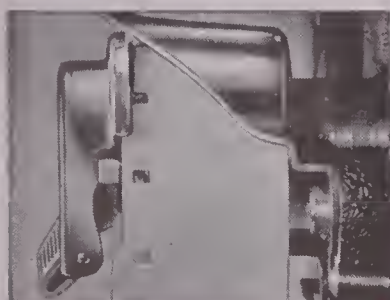
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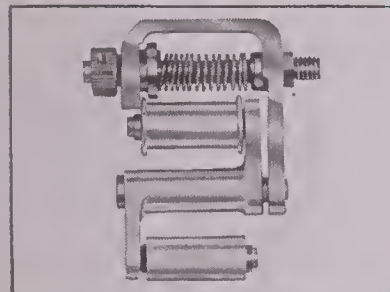


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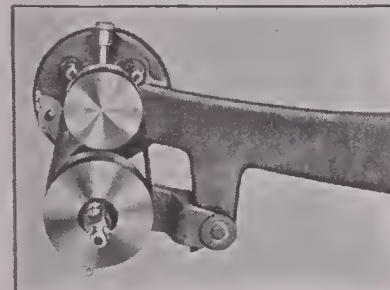
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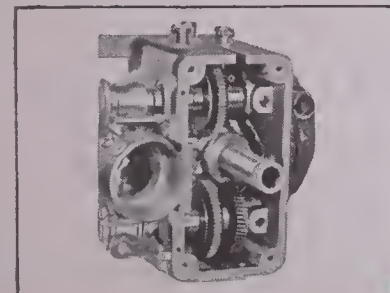
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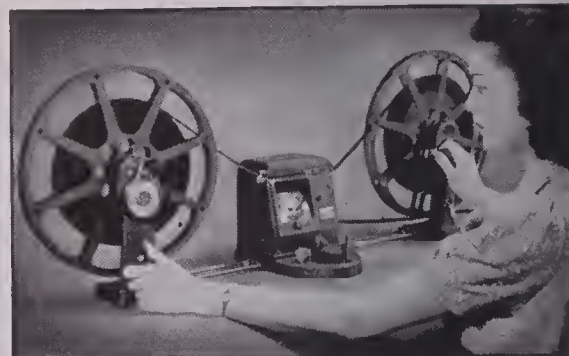
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The Magazine
Serial 13

DEC 13 1944

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In This Issue...

Solving Army Photo Problems

December

1944

DEC 14 1944



Salute to accomplishment...



IT is again a privilege to salute the American cinematographer, the technician and their associates the world over. To them—hearty greetings of the season and the wish that peace will soon return to us all.

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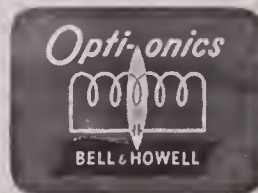
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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 25

DECEMBER, 1944

NO. 12

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THE FRONT COVER is an interesting offstage scene during the filming of "Where Do We Go From Here". Leon Shamroy, A.S.C., is the Director of Photography. It is a 20th Century-Fox production.



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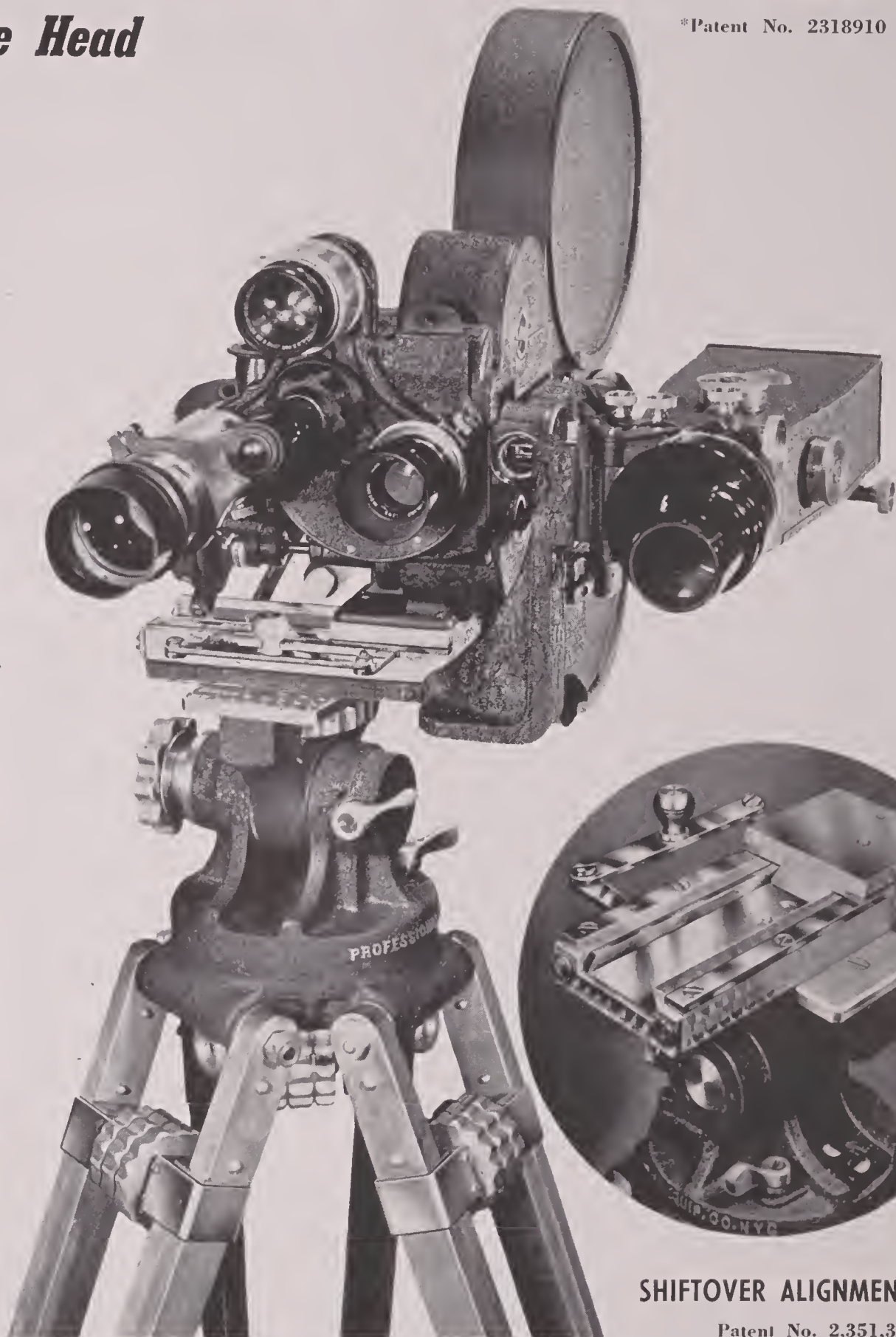
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★ We show above a closeup of the Shiftover Alignment Gauge and also a view of the B & H Eyemo camera mounted on the "Professional Junior" Tripod and Shiftover. These have been especially adapted for aerial use by the Office of Strategic Services, Field Photographic Branch, Wash., D. C.

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FRANK C. ZUCKER

CAMERA EQUIPMENT CO.
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THE WINNER—Here is Bill Boyd, better known as Hopalong Cassidy, who was proclaimed top western leading man by the Western Motion Picture Awards Association, which conducted a public poll among western fans in Southern California to name winners in various classifications in western films.

ACES of the CAMERA

JOHNNY MESCALL

BY

W. G. C. BOSCO

JOHNNY MESCALL, A.S.C., one of Hollywood's really great cameramen, entered this world unobtrusively in the little town of Litchfield, Illinois, on the eve of the twentieth century. At the tender age of three weeks he was moved to Indianapolis where he followed a routine for growing up that closely paralleled the recorded antics of another mid-west adolescent, Tom Sawyer. But with this added advantage: John was distinguished among his fellows by having a father who had at one time had the exciting experience of travelling with a theatrical company of "Uncle Tom's Cabin." And this made it possible for Johnny to inspire awe among his friends and hold them spellbound with tale of his father's life behind the footlights. His father was a man of many talents who not only played Marks the Lawyer, but who also painted the scenery for the show; a skill in which he was most adept and in which he used a technique obviously favored by most contemporary artists, applying the colors with a broom. Show business seemed like an exciting, wonderful life to Johnny and he determined to follow it when he grew up. He could never understand why his father had given it up for railroading.

When John was twelve his family moved to Los Angeles, where he attended Berendo High School, and earned pocket-money by caddying at the Los Angeles Country Club during week-ends and holidays. The experience exerted quite a profound influence on the lad during his formative years, and he found himself bitten by the golf bug and infected with the virus thereof. In fact he had it so badly that he swapped his show-business ambitions for those of a golf professional, and was so keen to get an early start at his chosen vocation that he convinced his parents it would be a waste of time and money for him to be forced to continue his educa-

tion beyond high school graduation. Regretfully, they acquiesced. Regretfully, because Johnny's brand of golf wasn't quite up to professional standards. Although in later years it was good enough to win for him the Los Angeles City Championship two years in a row.

Unwilling to return to school, John drifted from one odd job to another; grocer's delivery boy, garage mechanic's helper, small house electrical contractor's helper, printer's devil at Fowler Bros. Bookstore, and finally as druggist's helper in a small drugstore on W. Pico Blvd. Unfortunately, each job seemed to have less to recommend it than the previous one, and the chores in the drugstore such as mopping up and sweeping out were rather depressing for a young lad who had hitched his wagon to a star. But fate, in the form of a couple of regular two o'clock coke customers began to influence the plot.

These two customers, Mrs. Bob and Hal Kern, had husbands who were film cutters at the old Ince Studios in Culver City, so naturally enough the conversation over the soda fountain began to revolve around pictures. John had just seen D. W. Griffith's "Intolerance"

and the effect was that in one fell swoop he forgot both his golfing and travelling show ambitions. He wanted more than anything else to work in pictures.

To make a long story short, through the intercession of these ladies bountiful, and their cooperative husbands, he got an introduction to Irvin Willat, who took a chance and hired him as Bob Kern's assistant at \$10.00 a week. With scissors, a piece of plate glass, safety razor blades and film cement the job consisted of patching film by hand and taking notes in the projection room.

Youthful ambition and zeal is such a wonderful thing that in three months John felt sure he knew all there was to know about film editing and decided he wanted to be a camera assistant. The cameramen on the lot at that time included Clyde Devina, Guy Wilky, Bobbie Newhart and Paul Eagler, none of whom had assistants. But Charlie Stuman had, and John considered that to be precedent enough, and started a campaign to make himself somebody else's assistant by neglecting his regular job in order to be able to pester the cameramen. After several weeks of carrying camera equip-

(Continued on Page 414)





Broadway Cavalcade

By IRVING BROWNING

THERE is no place in this wide, wide world that can boast of a street as well known as Broadway, New York City. Actors, amateur and professional, roam here as does the financier and theatrical manager, for in this street, the big business, is show business. There is as much happiness as there is sorrow on this street of glittering lights. Many hearts beat faster, for the talented and the professional seek fame, and here folks come to greet them, first hand.

I have covered the street for more than thirty years and though my wife and I leave it each night, we are back in it, more times through the year, than we are away from it. I have wandered here as an amateur as well as a professional actor, newspaper and magazine photographer and illustrator. I have been to its best night clubs which I covered for magazine and film companies. I have shaken hands with its great and small. I have dined in its best places and slept in its best and worst hotels. I have seen the high lights and have met the low lives. I have seen fortunes come and go, for there, a pauper today, a millionaire tomorrow and a pauper the next day again is not unusual. Now and then, the great lose control and fall, for many forget the lean days while they have success.

I have great admiration for those who venture into this street in search of their goal, for I know that the way is not a sugar-coated path leading to success. But this is not the theme of my story. My story is of Broadway, and concerns the motion picture film premiere, as I have known it from way back in the silent days, to the present. If you have never worked with the publicity men in the motion picture industry, in the preparation of a big film

premiere, you have no idea of the amount of labor and expense connected with making one outstanding grand slam for press notices that goes into such a venture. For on Broadway, a new star may be born, or a film may hit new heights. On Broadway, they give a premiere everything.

To me, a Broadway premiere is like a fairy tale, for here grown-ups get a fairyland thrill attending one of these big shows. Here is unfolded for the first time, a fairy tale taking us into fairyland with all the fanfare, fit for a king.

The theatre is usually dressed in its best for the occasion, and to add to its glamour, crowds gather to watch the invited guests make their entry. Police keep order, making clearance so that the guests will have room to pass. Photographers clicking flashbulbs, recording these doings for the press and the publicity department of the film company. Now and then, the campaign behind a particular picture permits the expenditure for the use of huge arc lights which are focused on the exterior of the theatre and while these are in use, they make possible the photographing of motion pictures. Such film is used to show exhibitors throughout the country, just how Broadway accepted the picture, for this, together with good reviews, is all any film company asks, because that is the beginning of an income which many times runs into millions.

No producer would venture to give Broadway premieres to anything but the best of the Class "A" pictures. Some Class "A" pictures are given advertising campaigns and booked into one of the theatres like the Capitol, Music Hall, Roxy, Criterion, Warners, Hollywood or Rialto and the Class "B" pic-

tures go into a Broadway theatre more quietly and are presented to the Broadway audience for the first time with less ballyhoo.

The legitimate theatre on Broadway plays the same game; with an advertising campaign and fanfare, minus the arc lighted exterior. But the photographers are there and the big first nighters, the glamour gals and men of the movies, the stage and radio, the money bags, the bald heads, all this and heaven, too, come to the premiere.

The greatest bugaboo of the show business are the words of the critic in the morning papers, for he or she can make a film or play, or break them. Yet while it is no more than one man or woman's opinion, here as anywhere, folks are swayed by their opinions. Plays and films are a matter of personal taste, for what the critic likes, at times, the audience does not like. And there are times when the critic will bitterly attack a film or play and the audience may accept it.

Many of the major film companies own one or more theatres on Broadway, and they have their premieres in one or another of these theatres. Some of the major film companies do not own Broadway theatres, but rent one of the independent theatres to put their show on.

My part in these premieres was just a small one. I worked on them at different times either as a movie or still photographer, making a picture record for the film company who was putting on the show. When I decided to write this article, I went into the matter like a reporter, for now I wanted to know how much such a venture costs. I began by asking myself many questions and after setting these questions on paper, I then went about phoning several publicity men with whom I have been associated in the days when I roamed Broadway with a camera and I asked the following questions. Here are the questions and answers to them: First: What is the purpose of giving a film a Broadway premiere?

Second: What does it cost to put a film on Broadway for a premiere?



Third: What is expected from that premiere showing of a film?

Fourth: How do the film company executives react to the next morning's critics' reviews, when it means the life or death of a film?

Fifth: What effect does the critics' columns have on audiences who patronize Broadway to see the films?

Sixth: Last, but not least, how does it effect the exhibitors who subsequently book the films?

These are pertinent questions but because I had a series of photographs of theatre fronts during the premieres, for the sake of the story and the fact that I never did know the answer before, I found the answers and they were full of human interest, for when I photographed them, premieres were hot and heavy then.

Answer No. 1: Because Broadway is the experimental laboratory of the legitimate theatre, as well as the film, therefore at a premiere, the attendance of celebrities, the fanfare, lights, photographers, police, crowds, the radio broadcast from the lobby of the theatre, all add color to the preview making the circuit exhibitors, the press and the audience a part of this glamorous evening in movie fairyland.

Answer No. 2: The cost of putting a film on Broadway for a premiere in the early days ran as high as \$100,000, rarely lower than \$25,000. Breaking down that cost, the large electric sign and lobby display costs about \$15,000. Newspaper advertising campaign announcing the premiere up to \$25,000. Extras, such as radio broadcast, billboards, radio spot announcements, run into many thousands of dollars more.

Answer No. 3: When the film is well received by the critics and is a success, the box office draw becomes something to reckon with, for then the film company not only gets an

The six photographs on this and the opposite page bring on a little touch of nostalgia to those who rubbed elbows with the crowds in former days on Broadway. They also illustrate very well the manner in which pictures are really exploited on New York's best known street.





NOTE: Captain Fernstrom doesn't like to say much about his bravery. However, it is a matter of official record that he was awarded the Purple Heart, two Presidential Citations, the Air Medal with two Oak Leaf Clusters, and King George's Africa Star. He wears the British 8th Army Ribbon, the American Theatre Ribbon, the European Middle East Ribbon with 35 stars, and the Allied Corps Ribbon. We would say he must have been quite a combat cameraman.—The Editor.

background keys. The backgrounds were shot by Bill Heckler of Warner's Stage 5 (now Captain William Heckler).

The first interior was a shop 600 feet long by 300 feet wide, of which a great establishing shot was desired. For this we obtained the largest motor generator obtainable, and all the arc lights within grasp. I'll never cease in my appreciation of Buddy Meyers from Hollywood, who not only acted as sound man on our single system Wall camera, but also as the most ingenious of gaffers. Because we needed all our arcs for key and fill lights, Buddy helped me direct the other boys on shooting sunlight from hot reflectors in through every window for backlight. If we could have painted the machinery a lighter color the lighting would have been easier, but the time was so short so we were forced to try illuminating black in that large area. The fact that this space had a low ceiling eliminated all catwalks. We filled every overhanging lamp with photofloods. We not only made the long shots, but also dollied across the entire room. The immediate foreground action was easily handled by incandescents, juniors and babies. Much to my delight, everyone seemed pleased when they saw it on the screen.

Captain Len Hammond, formerly of 20th Century-Fox, directed the picture for Lt. Col. Robert Lord. He told us at the beginning that we were to make two complete features at the same time. One was recorded in Chinese and the other in Spanish. None of us understood either language, so we worked more or less "in the dark." Much of the action took place out of doors at early dawn or in the evening. We tried to obtain as much realism as possible, which required the fastest available film. Shooting army locations in wartime prevents the use of lights with the freedom associated with Hollywood. Nevertheless, by watching the weather, we were able to get quite a few striking effects. One in particular was made after a rain storm, with planes taxiing in through puddles of water, which helped in picking up what little light there was.

One interior location presented some really tough problems. We were shooting inside with lights, but the script called for planes to be flying outside in the hot desert sun. Buddy and I solved this one by securing a lot of sheets of red cellophane. These we pasted on all the windows until we had a balance of exposure between the outdoor scene and the interiors.

The teamwork of our entire crew was such that as each obstacle presented it-

(Continued on Page 420)

Solving Army Photo Problems

By RAY FERNSTROM, A. S. C.

Former Captain, Army Air Forces

TWO months ago I received a Certificate of Service covering the years since Pearl Harbor which I have spent on active duty with the Signal Corps of the Army Air Corps. During that time my photographic assignments have sent me around the world. Naturally, I can say nothing about the military nature of those trips, but on them I ran into many photographic problems; many of them difficult, but they had to be solved.

Thanks to the great number of experienced technicians of all studio crafts in uniform, it was no problem to gather a crew that knew how to meet any and all emergencies. Luck plays a big role

in the Service as well as out. The fact that a fast studio cameraman was needed, helped in my being selected to shoot feature length productions for Col. Frank Capra and Lt. Col. Robert Lord. No great quality was expected of me, which hurt, but I was happy to receive the opportunity of attempting under trying difficulties to make features that would compare favorably with those made under studio conditions.

Our first feature included interiors at eleven locations in all corners of the United States. We literally flew through the air, and the picture. There was no time to build sets. The exteriors included air scenes, ground shots and

16mm Color to 35mm Black-and-White

By CARROLL H. DUNNING

NEWREELS often show scenes of heroic rescues, aerial blitzes, and other "on-the-spot" thrillers. Sometimes the photography is noticeably bad, lighting is poor, focus hazy and grain size most annoying.

Probably they were photographed originally in 16mm. black-and-white and then blown up for theatrical release.

I have never felt, however, that a cameraman on a tossing ship in a stormy sea should be severely criticized for not resetting his focus between bursts from a diving Stuka.

In studio photography, "Oscars" are won with the slight assistance of "gaffers," "juicers," "key-lighting," "baby spots," "ears," "goboes," assistants, "loaders," "grips" and an easy chair and other simple appurtenances. Therefore such vital subject material should be viewed from the standpoint of audience interest and not as a yardstick by which to judge the value of 16mm. blow-ups.

It seems rather paradoxical to suggest the use of 16mm. color originals for ultimate 35mm. black-and-white results, but the reason is quite apparent. Kodachrome, as an example, is a dye product. It contains no silver. Therefore, the problem of grain magnification is eliminated.

Another impelling reason for the use of Kodachrome originals is the opportunity it affords for selective alteration of contrast in the 35mm. negative produced therefrom. For example, the coloration of live actors in a scene is naturally on the red end of the spectrum, while sky and foliage are generally complementary in hue and tone. The sky may be overemphasized in deep blue when photographed opposite the sun, and particularly in aerial shots photographed approaching the zenith. When enlarging under these conditions the use of a compensating filter within the blue range will suppress the complementary reddishness of the faces, and allow a greater over-all exposure to be used on the 35mm. negative. This will give a heavier deposit in the sky portions of the negative without increasing the negative weight of the faces. The final black-and-white positive will then have a normal gray sky instead of black, and the over-all values will be more nearly in balance.

On the other hand, if confronted with a flat, yet properly exposed desert scene with light khaki, you have an over-all reddish characteristic. You can increase the contrast of this original by the use of the same series of complementary filters.

Conversely, the over-all contrast can be lowered by using compensating filters

in the same tonal range as the over-all characteristic of the scene.

An alternative, of course, for altering over-all contrast may be attained by varying the time period of negative development.

Amateurs have turned in a wealth of material, some beautiful and some! They have shot with pockette cameras, magazine loads and daylight loads, all very satisfactory for *their* needs. These individual magazines having their own positioned apertures are at best made only of stamped metal and the aperture does not always accurately coincide with the static position of the pull-down pins in the camera to which it is attached. But if Kodachrome is to be used for copy enlargement it is imperative that the photographed frame line be *centered* across each set of perforations.

Naturally an optical printer is a precision instrument and is lined up to enlarge each 16mm. frame having a picture field bounded top and bottom by frame lines centered across the pairs of perforations in the original. If these vary from scene to scene as they often do, then they will be reproduced in the enlarged 35mm. blow-up within the visual field of the resultant projected image. To limit the field to be enlarged to the restricted area within the possible wanderings of these frame lines, is about as logical as eating the heart of a watermelon and throwing the rest away, and optical printers have no automatic means of anticipating this change of frame line in relation to perforations from scene to scene.

The solution—simply forego the urge to blow-up everything from Boulder Dam to baby's first tooth (because it's such a swell shot and the president's son took it himself).

Start with a 16mm. camera that has been tested for standard frame-line accuracy, and if this is off standard have the aperture repositioned. If you have several magazines, as part of a good camera equipment, test all of them. Hire a cameraman of proved ability in the 16mm. color field. Insist upon the use of needle-sharp color corrected lenses. Enlargement does not enhance definition. Scenes that are soft focus in character or indifferently sharp, may appear satisfactory in the original but their faults may be glaring in the blow-up.

On the exterior shots where controlled lighting is impossible it is better, if feasible, to adhere to flat lighting with the sun at your back. Remember that color rendition does its own modeling.

Kodachrome is fairly short scale medium, and blocked in shadows with empty highlights caused by cross and back



A blow-up from 16mm.

lighting give an effect of unpleasant in the final black-and-white enlargements.

For interiors, or close-ups, where light sources can be controlled, it is not only permissible but effective to accentuate your modeling by cross or back lighting, provided your over-all front fill light has definitely filled in your shadow detail.

In all professional photography, your entire effort, worthy or otherwise, as well as your investment, is vested in your master negative and is guarded as such. Kodachrome originals occupy exactly the same position and are likewise the repository of your entire investment. But being a reversal process and positive in form there seems to be an almost uncontrollable yen to project them "just once," you know, just for the boss. *Don't do it.*

The smallest projection scratches and rewind cinch marks are magnified about six times their size on the enlarged 35mm. negative, and the refractive characteristics of a scratch even increases the ratio.

The safe and satisfactory procedure is to make a duplicate Kodachrome print of your "dailies" immediately. Then when you have edited the latter and eliminated all definitely unusable sequences, you can conform your original and blow up the sequences which may possibly appear in the picture.

There are many advantages in the use of 16mm. Kodachrome. The photographic equipment is light in weight and its smaller size makes it extremely practical in confined spaces. Further, the ease of handling as against a more cumbersome equipment make it ideal in many situations. For example, a follow shot of a bomb released through the bomb bay door of a plane, or a remote control shot from the rear of a P38, and for atmosphere or "pick-up" shots, the 16mm. camera is unexcelled. The public simply accepts it as a common-place amateur instrument and does not realize that you are making movies.

As I said before, there is no grain size to be enlarged, for Kodachrome is grainless. And the selective alteration of contrast is an attractive factor. In these wartimes, good 16mm. equipment is scarce, but wars will end.

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Plan Your Christmas Movies

By GLENN R. KERSHNER, A. S. C.

THIS year I suggest that you home movie enthusiasts do something a little different in making your Christmas movies. I feel certain that you will really enjoy my suggestion, if you carry it out, for I have been doing it for more years than I care to admit.

Instead of setting up your usual Christmas tree, and making the same pictures you made last year, and the year before, plan to set up a miniature set that will include the Christmas tree, but have the tree in a setting that will include hills, rocks, trees, and perhaps a miniature village—all covered with snow.

Yes, I know such a setting will require a lot of work and planning. But you will enjoy it once you get everything under way. First thing to do is make a sketch of what you want to create. I suggest that you shoot the Christmas pictures in Kodachrome. If you do, it is wise to make your sketch in colors.

Your sketch finished, you go about securing the necessary things to be used. If you have a village with a street scene in it, you will want some little sleighs and horses. If you cannot buy these in any of the stores, you can make them very easily yourself. You will also want some little figures of people. You can make these, too. I make my models with clay, and make molds. Then I make plaster of paris figures by pouring the plaster into the molds. Next you paint the figures, horses, etc., what ever

colors you desire.

Next you build your little houses, a church with a steeple, your stores and street lamps. After painting these, set them aside until you are ready to actually build your Christmas set.

A week before Christmas I always lay a strip of three ply fiber board on the floor where the set is to be made. I cover this with roofing paper, to protect the floor and rugs. I then take my sketch and go to work building my background landscape. Where I want hills I build little board frameworks, covered with fine chicken wires. Over these frameworks I lay pieces of cloth that have been dipped in plaster of paris, which form the ground. You have to work fast when you get to building your rocks and hills with the plaster of paris. I suggest that you mix only a small portion at a time, or it will harden faster than you can mold it into the desired shapes.

When your landscape has been completed you then set up the little houses, churches, etc., which you have already constructed. Next you set your Christmas tree where you want it, and then you start the job of filling in the necessary shrubs, bushes and trees on your hills and around your houses. You will have to build your trees, which is not difficult.

Cut sticks the desired length of the tree trunk. Bore holes in the stick where you want to have limbs. Then gather a lot of Juniper branches and break off

the little ones to be used as limbs. Dip the end of each little branch in glue and stick in the holes of the prepared tree trunk. By starting at the bottom and decreasing the size of the limbs as you reach the top you will finish up with trees that are extremely real in appearance.

If you are fortunate enough to have any electric wire and some small light bulbs, you next wire your houses and stores, place the bulbs in the houses and run the connecting wire to a switch. With all this done you build up drifted snow on your rooftops by using wet plaster of paris. Use the same method to show snowcapped fence posts, etc.

You may want to make your scene very realistic by having action. If you want your miniature autos, horses and sleighs, etc., to move, you simply attach a hidden string to them, and move them at will.

You now turn your attention to the sky backing. Take a piece of canvas and tack it to a wooden frame, and paint it a sky blue. For daytime effect, you may take small tufts of cotton and stick them on the blue sky to form clouds. A little carbon dust shaken on the cotton clouds will give you the shadows you will want. Or, if you are handy with the brush, you may paint your clouds in. For night effects, you can hang tiny pieces of tinsel on threads. They will give you the effect of twinkling stars.

Now comes the biggest thrill of Christmas Day, when you will want to make your movies. First, I would suggest that you make the first shot one without any action. Sprinkle plaster of paris, white flour, or fine salt over everything to give the effect of snow. Then light your set. If it is a daytime shot you want to make, you must illuminate your sky very brightly. Use your photofloods and other lights to the best advantage. You can use gelatine of different colors to represent various times of the day. When all is properly lighted you make your shot.

Then comes the really big thrill. You set up a small electric fan, start sprinkling more flour, start your autos and horses moving with the invisible strings, turn on the fan, and—there you have a snow storm to photograph.

For your night shot, do not light the sky at all. Turn on all the lights of the Christmas tree, and the lights in the various houses; also the street lights, if you have constructed them. Use as much additional light as is needed to properly photograph the scene in Kodachrome. You can have a silent, windless night, or one in which the snow is quietly falling, or one in which a gale is piling the snow in heaps. In fact, you will be able to do many, many things with this setup.

Be sure you use a tripod, however, so your pictures will be steady on the screen. I also suggest that you place your camera on a small wagon. Lay

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Are You Ready For Industrial And Educational Filming?

By ALVIN WYCKOFF, D. Sc., A. S. C.

CONTRARY to accepted opinion, we have learned much through the failures and successes of the amateur movie maker. It is he who, unconsciously, has pointed the way!

How many professional cinematographers are aware of the vast opportunities that lie hidden, now smoldering under a program that is being carefully prepared by national industrial and educational forces, to burst forth into a flame of film production activity the moment war conditions will release the necessary raw materials and production equipment with which to execute their plans?

It was the amateur who innocently pointed out to the industrialist and the educator the economic method with which to impress the mind of the observer through the medium of 16mm. film.

The average professional photographer has been slow and reluctant to investigate and take up this method of photographic activity. He has been inclined to sit back and observe rather than participate in activity in the 16mm. field. He has remained aloof because he didn't want to appear as being "in competition" with the amateur. This aloofness will have to be dispensed with, for the use of 16mm. film in the industrial and educational field is here to stay, and a great field it is going to be.

The 16mm. film has graduated into the professional class, and so has the 8mm., for that matter! However, the 16mm. is holding its own with the professional 35mm., and the moment Victory dawns out of the present war 16mm. film production, both black-and-white and color, will be firmly planted as a professional medium for motion picture photography in every important industry, scientific and human activity that has a story to tell to its own particular clientele. In many instances the 8mm. film will be used for demonstration, possibly by direct photographic production, or through reduction from 35mm. and 16mm. subjects.

The former claim by many that the 16mm. film cannot be blow up to 35mm. standard is without justification today. Every day important screenings of original 16mm. productions blown up to standard 35mm. films are proving adequate, and in many instances equal to the best original 35mm. films. It is admitted that some of the results are miserable examples of "commercial rush and incompetence," but that is not the fault of the medium used. Incompetent, careless processing can ruin the most perfect original product.

One of the finest educational pictures

that has ever appeared on the screen was shown to a gathering of prominent educators. It was an 8mm. classic in Kodachrome, made entirely by an amateur in his spare time; telling the story of a young married couple who visited their family physician to be advised in the preparation for a coming "blessed event." The excellent technique of that film created a demand for as many copies as could be duplicated before the original wore out. The lesson it taught benefitted many young mothers, and the new life they brought forth.

The possibilities of the 16mm. film have become almost common knowledge through the many subjects released by the War and Navy departments for public viewing, and the subjects of training films for the armed services.

Non-theatrical producers are preparing their programs NOW, to be made either with 16mm. film or with 35mm. film to be finally reduced to 16mm. A few theatrical producers are using 16mm. film now, but the greater popularity of this photographic medium is going to be promoted by the industrialist.

The corporations of national and international scope are going to reach out to their public with the 16mm. films that can be shown in the home, the club, the church, the schools and the out-of-the-way places that are not equipped to exhibit the larger professional films.

Ninety per cent of the production will be contracted to producers specially equipped for this special type of film making. The industrial corporations will demand a certain perfection of photographic and directional technique as a standard to be delivered for acceptance. Obviously, such stringent demands are going to call for the best efforts of a trained photographic personnel. To comply with these demands is going to test the best technical skill available. Men who have prepared their minds to readily grasp new problems and turn them to profitable use will be in demand. This will be a tremendous field for cinematographers who will master the technique of using 16mm. film instead of the standard 35mm.

We have dwelt at length herewith on 16mm. production, as well as pointing up the narrow 8mm. film. Now, let us consider the use of the 35mm. film. Here is a film the use of which generates new and wider problems to be considered. All the skill of the best photo-technical knowledge will be required to successfully meet the ever increasing problematic demands. The use of 35mm. film in the industrial, scientific and educational



A blow-up from 16mm.

production field is going to call for every trick and effect that human ingenuity can devise. The problems of lighting are going to be varied and many. For the man who has adopted the photographic profession as a livelihood, there is for him no end of continuous research and study if he would fulfill his ambition and stand at the top of his profession.

There are seven very important qualifications demanded by the producer that must be innate qualities in the individual Director of Cinematography. Let us enumerate these qualifications, and then take them up separately.

First: It is important that he have wide knowledge of all phases of photography.

Second: He should thoroughly acquaint himself with the particular requirements of the laboratory in which his film will be processed.

Third: He must have a well balanced knowledge of lighting technique.

Fourth: He must be a good judge of qualifications of men he will select to work with him, and he should possess good managerial ability.

Fifth: He must be constantly alert in order that he may be both tactful and diplomatic.

Sixth: He must have the courage to be firm and positive when necessary.

Seventh: There should be no interests in his mind that do not promote the ultimate success of the production to which he is assigned. He should be able to offer valuable suggestions and ideas, and constructive criticism to the proper person in authority.

Now, let us take up these essentials in a little more detail.

The first qualification seems almost obvious, but when it is considered that the average producer (there are isolated exceptions) has very little technical knowledge of the motion picture camera and its complexities, the Director of Cinematography is the only proper individual to be relied upon "to put the picture on the film."

The second qualification is important beyond any argument. The Director of Cinematography MUST have a knowl-

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Top left is a scene from Paramount's "Rainbow Island", filmed in Technicolor. Center girl in water is Dorothy Lamour, who heads cast that includes Eddie Bracken, Gil Lamb and Barry Fitzgerald.



Bottom is an offstage scene during production of "Nob Hill," at 20th Century - Fox Studios.

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Above, Model 9 Processor ready for operation. Left, Darkroom showing complete equipment supplied. Instruction book with Kit.

Aces of the Camera

(Continued from Page 403)

ment and bothering the cameramen by asking every conceivable question he mustered up enough courage to approach Irvin Willat for an assistant camera job. When he knocked on Mr. Willat's door and heard that gentleman call out cheerily, "Come in. Just the man I want to see," he felt sure that he had chosen the propitious moment. But alas, it was not to be that easy. Before he could make his plea, Willat went on to say that he had an interoffice memo from E. H. Allen, the studio manager, telling him to terminate John's services because he had been making a general nuisance of himself on the lot.

Leaving Culver City behind him he then wandered around Hollywood until he was hired by Famous Players Lasky for the stimulating job of pushing a film rack around in the positive dark room under the direction of Mike Leshing, now in charge of 20th Century-Fox Laboratory. Until the memory of the inconveniences inherent in unemployment had been forgotten, John attended strictly to business and was soon promoted to the negative dark room where he worked under Johnny Cramer. But as soon as the callouses honestly won in pounding the pavements had healed, the old urge to be a cameraman's assistant began to manifest itself. Alvin Wyckoff, who was head of the Camera Department at that time, was button-holed with the request. Only it wasn't a request, it was an ultimatum; "I want an assistant's job, or else." Alvin said it was "else"; and Johnny went back on his Culver City beat.

Passing the old Sanborn Laboratory one day he decided to go in and ask Jack Gorbell, who was superintendent, for a job. Well, it seems they needed a printer and of course John told them he was just the man. It must have been a good sales talk because he was invited right into the printing room and told to print up a roll on the spot. And he certainly was on the spot. His only previous experience had been watching the printers at work. But by great fortune Jack Gorbell was called to the 'phone and the conversation lasted long enough for John to get the hang of the Bell & Howell continuous printer by casting an alert eye over the way in which the other boys were doing it. When the superintendent returned John was rolling merrily along and was sufficiently impressive in his act to get the job.

It was while he was at Sanborn's that he decided to try his luck as a free lance news cameraman over the week-ends. Armed with a camera purchased from a Main St. pawn shop for \$25.00, short ends of negatives donated by visiting cameramen, and the knowledge that Gaumont News in Flushing, N. Y., would buy acceptable footage at so much per accepted foot, he set out on his new

venture. Week after week the footage went out, and week after week the same footage was returned. They developed it but wouldn't accept a foot of it. He decided that either the events photographed were not sufficiently newsworthy or that the photography was too artistic for the newsreels. Modestly, he decided it was the latter.

In 1920, when Samuel Goldfish, the Samuel Goldwyn of today, moved the Goldwyn Studios from Fort Lee, N. J., to the old Triangle Studios in Culver City, he again decided to try his luck at getting a job as an assistant cameraman. This time it worked. Mason Litson, the production manager, hired him at \$20.00 a week with a promised raise every six months of \$5.00 if he made good. He went under the wing of Marcel Andre Le Picard, and trained his first lens on Madge Kennedy.

The third day was almost the last. He opened a Pathe retort, that's what they called magazines in those days, thinking it was empty. But unfortunately it contained an undeveloped portion of a lap-dissolve that had been shot previously in an interior that had since been torn down. Realizing his mistake, he tried to shut the magazine quickly enough to beat the sunlight; but as slow as the orthochromatic film was he was a fraction of a second slower. Confessing his mistake to Marcel he was told that it looked pretty bad, and that evening when he was ushered into Abraham Lehr's office, the studio general manager, he reasonably expected the worst. But Marcel had interceded, and the studio manager decided he had learned a good lesson and that it would probably never happen again. It never did.

So Johnny kept on working for Goldwyn, getting his raise every six months, making inserts and temporary titles for the cutters in-between pictures and in the course of time became a second cameraman. Then one day Lew Physioc, the head cameraman, who had just promoted Norbert Brodine and Don Short to first men, decided to take a chance on John and gave him an assignment as first cameraman on the Booth Tarkington "Edgar" series, two reelers, directed by E. Mason Hopper. Then he graduated to features with Hopper, Rupert Hughes, Charles Brabin, Allan Crosland, King Vidor; winding up his stay with Goldwyn when the merger made it M.G.M.

Soon afterwards he met J. L. Warner on the old Sunset Boulevard lot and Warner signed him to a contract on the spot, writing out the deal on the back of a letter he had in his pocket. There followed three or four years of picture making that established Johnny as one of the industry's top flight cinematographers. Then he went to De Mille and still further enhanced his reputation with a series of pictures featuring Connie Bennett. In 1933 he went to Europe for M.G.M. and arrived in Berlin in time for all the excitement of Hitler's rise to power.

As cameraman for Will Rogers he became firmly established as a creative cameraman with exceptional ability. And he and the great humorist became fast friends. Will had a great regard for Johnny's ever ready pungent humor, and it is no secret that the two of them collaborated on the syndicated column that carried Roger's byline. As a cameraman, Johnny Mescall's work speaks eloquently for itself. As a man, no greater tribute can be paid him than to say that Will Rogers chose him for a friend.

Among the scores of pictures which have been transformed into top cinematographic successes by his talents Johnny's favorites are, "The Magnificent Obsession," "Show Boat," and "Take a Letter, Darling." The last named being nominated for an Academy Award. More recent productions, some still to be released, that reveal the Mescall touch are, "Andy Hardy's Double Life" which he made with George Folsey for M.G.M., "Dark Waters" which he made with Archie Stout, for Ben Bogeous, "Youth Runs Wild" for R.K.O., "Sensations of 1945" with Pev Marley for United Artists and "Three Russian Girls" for United Artists. Currently under contract to Andrew Stone for a picture entitled, "Bedroom Manners," the indications are that both producer and cameraman will repeat their previous successes.

Planning the Teaching Film

The views of users of educational films are set out for the guidance of their makers in the British Film Institute's recently published leaflet, "The Content of Educational Films" (6d.).

Starting with an attempt to define the uses and types of film which the schoolmaster wants, the document goes on to consider some of the general requirements necessary to the turning out of a good teaching film. It insists, for instance, that there should be the closest collaboration between the producer and the educationist from the moment the idea for the film is conceived until the finished film is ready for use.

It also suggests that before any film is made, its aim and the age group with which it is to be used should be clearly in mind and then the story told as briefly and concisely as possible. "Artistic shots should not be included merely because they are artistic!"

Consideration is also given to the tempo to be used, color, commentary, natural sound, the use of dialect, musical background and credit titles, which it believes should be abolished, but if not should be relegated to the end of the film or better still, to the Teaching Notes which should be a normal accompaniment of all educational films and produced at the same time as the film is shot.

An American Tradition
**— HOME MOVIES
 ON CHRISTMAS NIGHT**



"First, the ones we made when Bob was home on leave"

THE EVENING BEGINS, and ends, with the movies they made when their boy was home on leave last Christmas. It's good to have him smiling out at them from the screen . . . wonderful to reflect, with a lift of the heart, that perhaps next Christmas he'll be home again.

Of course Ciné-Kodak Film is scarce; although you may be able to get a roll now and then. But happily, in any event, there are the reels of other years, ready and wait-

ing to make the holidays happier days.

***Have your Ciné-Kodak dealer
 check your projector . . .***

If you haven't been using your projector as often as usual during this busy year, it's a good idea to have your Ciné-Kodak dealer clean it, oil it, and thoroughly check it; then you can be sure it will be running smooth as silk Christmas night . . . Eastman Kodak Company, Rochester, N. Y.

*Life is a movie—***CINÉ-KODAK** *gets it all*

THROUGH the EDITOR'S FINDER

YOUR editor would like to send a card to everyone of you loyal readers wishing you Christmas greetings, but, honestly, there are too many of you. So, he takes this opportunity to wish all of you a Merry Christmas.

In America this should be a merry Christmas this year. As the year has drawn toward a close we have held a presidential election. Close to 50,000,000 American citizens exercised their right to vote. And, despite the fact that the race was a close one, from the plurality point of view, the large minority accepts with good grace the will of the majority. Instead of strife, Republicans and Democrats shake hands and get right down to the business of winning the war and planning for a peace that will attempt to make this the last war in history.

Speaking of the war, as 1944 progressed America and her Allies have been pushing the Nazis back further and further into their homeland; have been liberating cities and countries that have been ground under the Nazis heel for four years. In the Pacific, Japan has been taking the licking of her life, and, while we know it will take a lot more fighting to whip her, it is now quite evident that Japan has lost the power which enabled her to conquer so much territory at the outset of the war.

We may not be able to get bacon some times. We may have to smoke a few less cigarettes. We may have to give up that fishing trip, or the trip to the country to see Aunt Nellie. But, by and large, it has been a great year, and our Christmas should be a very happy one.

PRODUCERS of educational and industrial films who wish to have them reviewed by our associate editor, Edward Pyle, Jr., are invited to send them along to this office.

We ask the sponsor of each film sent for review to enclose the following data: Purpose for which the film was made; producer; narrator; indicate if filmed on 35mm. then reduced, or on 16mm. negative and positive print, or 16mm. reversal with contact print, or 16mm. print from negative made from reversal original, etc.; sound recording—direct 16mm. or 35mm. optically reduced to 16mm., or 35mm. recorded to 16mm.; availability or restrictions, on loan or rental. We would also like one or two good still pictures illustrating the subject.

WELL, here we are again, plugging the idea that the cinematographers should get better screen credit when they photograph an unusual picture in excellent fashion.

To our way of thinking, five fundamental elements are responsible for the making of a good motion picture. They are the writing, producing, directing, acting and photography. Without a good story you cannot have a good picture. Without an intelligent producer a good story hasn't much chance of coming to the screen as a good picture. Without good direction the good story easily is ruined. Without actors who know how to portray their roles, the efforts of producer, writer and director are wasted. BUT, without photography—either good or bad—there would be no picture of any kind.

Therefore, this writer contends the cinematographer should get equal billing, NOT ONLY ON THE SCREEN, but in ALL ADVERTISING as well. Other countries recognize the cinematographer and give him equal billing with the director. But the American film companies still continue to bury the name of the cinematographer along with a lot of people who do extremely minor things in the making of the film. Some day, we hope, the cinematographer and his art will be truly recognized.

PPRIVATE Stanley Cortez, who in civilian life is a member of the American Society of Cinematographers, and is one of Hollywood's top cinematographer's dropped in to see us the other day while home on a furlough. He is stationed with the Signal Corps Photographic Center at Astoria, Long Island, and gave us a lot of news about the boys we know there.

We tried to get Stanley to tell us what HE is doing, but he brushed himself aside in his enthusiasm for the work the other men of his outfit are doing. He says there is no group of men doing a better all around cinematographic job than the gang at Astoria. Being a top cameraman, Stanley ought to know. So, we give an orchid to those men.

OF particular interest at this time is a 54-page bulletin just prepared by the Motion Picture Unit of the U. S. Bureau of Foreign and Domestic Commerce, dealing with the potential motion picture markets in Africa. The comprehensive survey reveals that Africa has a total of 991 motion picture theatres capable of seating 559,382. As there undoubtedly will be a wild scramble for this market in the post-war days, this bulletin should be invaluable to film producers and distributors in formulating their post-war plans. The bulletin is packed with pertinent information touching on everything from censorship to audience behavior. It may be obtained by writing the Bureau of Foreign and Domestic Commerce, Motion Picture Unit, Washington, D. C.



Solitude

HAVE you done your part in putting over the Sixth War Loan? Have you bought every bond that you possibly can afford? If you have, then make up your mind what you can do without, and buy another bond.

We are winning this war now, but to speed the victory, to bring our boys back sooner, to save precious lives, we cannot slow down now. In fact, we must push all the harder now that we have the enemy on the run. It takes money to supply our boys with tanks, guns, planes, bullets, food, clothing and all the things that are needed in modern warfare. Our boys are GIVING their blood and their lives to win the victory. Let us LEND our money to help them!

**"For
photographic
perfection,
use arcs."**

Len Smith A.S.C.



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AMONG THE MOVIE CLUBS

St. Louis Club

Feature of the November meeting of the Amateur Motion Picture Club of Saint Louis was the showing of the club-made film, "Never Say Diet."

This film represents a lot of work on the part of the club members who participated in its creation. The film committee which wrote the story and produced the film consisted of Werner Henze, chairman, Lon Wadman and James Bialson. Official photographers were Neil Butteiger and Joseph G. Epstein.

Outstanding in the picture were Martin Manovill as the Bum; Mrs. Gladys Michener as the most angelic angel; Ann Scholz as the housewife; Skippy Rasmussen as the dog; Ione Taylor as a nurse, and Vernon Rasmussen as the doctor.

In addition to the club picture, three others were screened. They were "Our Wedding Day," by Earl Brisbin of the San Jose, Calif., Movie Club; and "Freckles Herself," by Ralph Richards of the same club, and "Our Son at Three Months," by Lon Wadman of the St. Louis club.

Philadelphia Cinema Club

The regular monthly meeting of the Philadelphia Cinema Club was held on the evening of November 14th, with six films featuring the meeting.

Conrad Picofsky presented five of these 8mm. Kodachrome. They were: "In a Garden," "Ice Follies of 1944," "Earle Theatre," "A History Tour of Philadelphia" and "Waltz of the Flowers." All were presented with synchronized music and sound effects. The "Waltz of the Flowers" film was synchronized to the symphony of the same name, and is a pictorial interpretation of the music.

Club President Arthur Hurth presented a 16mm. Kodachrome subject, "The Oyster Fleet."

San Francisco Club

An all Kodachrome bill featured the November meeting of the Cinema Club of San Francisco, following the usual club dinner.

George Sohst, as guest of the club, screened two excellent pictures: "Glacier National Park" and "Our Country," covering a trip from Detroit to San Francisco via the southwest national parks.

Rudy Arfsten completed the program with an 8mm. Kodachrome, "Rocky National Park."

Chicago Cinema Club

Newly elected officers of the Chicago Cinema Club are: President, Charles C. Hammack; Vice-president, Mrs. George Kirk; Secretary, Miss Thelma Jones; Treasurer, Sherman Arpp. Directors: Isidore Vise, Harriet Hewitt, Keith Nowell and Raymond Allen.

An outstanding pictorial travelogue in color, photographed by Willa T. Doubson, featured the November 9th meeting of the club. It was "Guatemala—Land of Enchantment and Color." The film had a symphonic background, arranged by M. A. Hagel.

For the November 24th meeting A. A. Kadow presented "Feathered Friends," a splendid Kodachrome film dealing with birds. Mr. Kadow also gave an interesting talk on "Interval Timers as Applied to Lapse Time Photography," illustrated with flower shots.

La Casa Movie Club

Members of the La Casa Movie Club of Alhambra, California, continue to show tremendous interest in their meetings. Attendance has exceeded 200 at each meeting for many months.

Two 8mm., two 16mm. and one 35mm. film made up the program at the November meeting, held in the Y.M.C.A. Building, with D. M. Gardner as chairman. "Canadian Rockies" was presented by Oliver Jessen. "South Pacific" was an unusual offering, as it was made by L. B. Reed, a club member now in the service. Mrs. Reed presented the film. Guy Nelli presented "The Roundup," C. L. Ritter presented "Vacation Memories." The 35mm. film, "Western Travels," was presented by H. P. Carnahan.

The club's Christmas meeting will be held on December 18th, and officers expect the largest attendance in the history of the rapidly growing organization.

Brooklyn Club

Two meetings were held in November by the Brooklyn Amateur Cine Club; one on November 1st, the other November 15th.

Don Hancock of the Castle Products Corporation featured the first meeting with the presentation of a question and answer forum on the general topic of editing motion pictures. He illustrated his talk with the latest Castle Films.

Four films were screened at the November 15th meeting. They were "Frail Children of the Sun," by John Larsen, "World's Fair," by Francis Sinclair, "Lend Me Your Ear," by Mrs. Niedermeyer, and "Club Outing," by Charles Ross and Charles Benjamin.

As an added attraction, Jay T. Fox presented an unusual program of color slides.

M.M.P.C.

Four films highlighted the November 9th meeting of the Metropolitan Motion Picture Club in the Hotel Capitol, New York City.

"Land's End," in Kodachrome, was presented by member Frank Gunnell. It is a film taken on Gaspé Peninsula, with emphasis on the fishing and bird life.

Victor Ancona, of the New York 8mm. Club, presented "Kid-Napped," an 8mm. Kodachrome film of unusual quality.

"Keep 'Em Playing," a one-reel Kodachrome version of the Miami, Fla., Fashion Show, was presented by member Robert M. Law.

Final feature of the evening was a 16mm. Kodachrome picture, "Mexico," by member Ernest Miller.

On November 16th the club held a meeting for the screening of films taken at the club's outing on Staten Island.

New York Eight

Three films featured the November meeting of the New York City Eight Millimeter Motion Picture Club. They were "Film of the West Country," by Tom Jeffers of Inglewood, Calif.; "Permanent Color," by Helen Loeffler, and "Titling," by Fred C. Ebbshoff.

(Note from the Editor: If the members of the New York Eight do not turn out for their dinner meetings it is not the fault of whoever prepares the monthly bulletin. We cannot help but print a paragraph from the recent bulletin. Here 'tis: "For dinner, juicy, tender, broiled, thick lamb chop, with buttered and seasoned whipped potatoes served in their own jackets! Enough to water the mouth of a stone statue! Feathery sponge cake, rolled with cooked apples and topped with foamy brandy sauce." Well, that should bring them out to see pictures.—HH)

WE ARE seriously considering establishing a "gadget" department in the AMERICAN CINEMATOGRAPHER. But we would like to make it a department in which we publish only stories and illustrations about gadgets created by our readers. In other words, will you share your gadgets with the other readers of this magazine? You do not have to be an experienced writer to tell us about your gadget. Just send pictures, drawing and a brief description of the device and what it does, as well as what it costs to make, together with your name and address. We hope this will materialize, and we will be looking forward to receiving a lot of answers to this invitation.



Bubbling Over

... and it will continue to bubble over for a long, long time—thanks to Ansco Triple S Pan.

What we mean is this: When you capture a realistic scene (like the one above) on Ansco 8 or 16mm film—you're sure of *good* picture results.

If your camera is loaded with Triple S Pan, the advantage is on your side because of:

- 1—High speed, which makes it unexcelled for filming under artificial lights.
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Try this versatile film today. Just ask your dealer for *Ansco Triple S Pan*. For 16mm cameras, it is supplied in 50 and 100 ft. rolls; for double-8mm cameras, it is available in 25 ft. (double-width) rolls.



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8 and 16mm

TRIPLE S PAN FILM

KEEP YOUR EYE ON ANSCO—FIRST WITH THE FINEST

What A. S. C. Members Are Filming

AS this issue goes to press the following pictures were in production in Hollywood. They are listed by studios, with the name of the Director of Photography for each picture:

Columbia Studios

"Counter Attack," James Wong Howe, A.S.C.
 "Leave It to Blondie," Franz Planer, A.S.C.
 "A Thousand and One Nights," (Technicolor), Ray Rennahan, A.S.C.
 "A Guy, a Gal and a Pal," Glen Gano, A.S.C.
 "Men of the Deep," George Meehan, A.S.C.

International Pictures

"Along Came Jones," Milton Krasner, A.S.C.

Metro-Goldwyn-Mayer Studios

"Hold High the Torch," (Technicolor) Len Smith, A.S.C.
 "The Valley of Decision," Joseph Ruttenberg, A.S.C.
 "Without Love," Karl Freund, A.S.C.
 "Our Vines Have Tender Grapes," Robert Surtees, A.S.C.
 "Weekend at the Waldorf," Robert Planck, A.S.C.

Monogram Studios

"Make Way for Kelly," William Sickner, A.S.C.

Paramount Studios

"Duffy's Tavern," Lionel Lindon, A.S.C.
 "The Lost Weekend," John Seitz, A.S.C.
 "The Love Letters," Lee Garmes, A.S.C.
 "The Affairs of Susan," David Abel, A.S.C.
 "The Virginian," (Technicolor) Harry Hallenberger, A.S.C.

"Scared Stiff," Fred Jackman, Jr., A.S.C.

Producers Releasing Corp.

"Crime, Inc.," James S. Brown, A.S.C.
 "Barber of Red Gap," Jack Greenhalgh, A.S.C.

RKO Studios

"The Enchanted Cottage," Ted Tetzlaff, A.S.C.
 "The Invisible Army," Nick Musuraca, A.S.C.
 "The Spanish Main," George Barnes, A.S.C.
 "Johnny Angel," Harry Wild, A.S.C.

Republic Studios

"Jealousy," Henry Sharpe, A.S.C.

20th Century-Fox

"Royal Scandal," Arthur Miller, A.S.C.
 "Circumstantial Evidence," Harry Jackson, A.S.C.
 "A Bell for Adano," Joseph La Shelle, A.S.C.
 "Molly, Bless Her," Charles Clarke, A.S.C.

United Artists

"A Walk in the Sun," Russell Harlan, A.S.C.

Universal Studios

"Salome—Where She Danced," (Technicolor) Hal Mohr, A.S.C., and Howard Greene, A.S.C.
 "Here Come the Co-Eds," George Robison, A.S.C.
 "It's Never Too Late," Elwood Breddell, A.S.C.
 "Romance, Inc.," Paul Ivano, A.S.C.

Warner Bros. Studios

"The Big Sleep," Sid Hickox, A.S.C.
 "Hotel Berlin," Carl Guthrie, A.S.C.

Solving Army Problems

(Continued from Page 406)

self we went into a huddle and solved it. Our combined experience was enough to usually see us through.

In shooting the air stuff we had unexpected problems. With the new faster planes, former camera mounts and former methods did not work. I was nearly killed on the first try at diving on targets with regular scarf ring mounts. One of these broke, and we would surely have lost a camera had we not tacked everything with safety wire.

Thanks to the ever-present shops, we built a new type mount—and it worked, after I had broken two gyro heads and snapped off two handles. My setup was in an A-20 open rear cockpit. Diving alongside fighters firing on ground targets left me black and blue every trip.

For gunner angles on targets, we rigged a set camera in a belly tank in-

der one of the fighters. Because of the speeds involved the stream-lining of all cameras had to be good, or we would have had pieces strewn from coast to coast. As it was, we had to repair our equipment nightly.

One scene I particularly liked required that a formation of planes come flying over mountains at early dawn, and fire simultaneously on ground targets with tracer bullets. We faced the targets East into the dawn, and had the planes come from the lighted early sky, and then panned with them into the darker targets as they opened up with their guns. The effect was very spectacular. As the planes were almost lost in the darkness the streams of bullets showed markedly against the targets. Then the ships pulled up into the more or less lighted sky again.

Modern, fast fighter planes, when ground strafing, present problems in pan shots heretofore unmatched. To stay with some of these we resorted to very long lenses on the sound camera. The

Akeley gyro tripod was set up far back from the points at which the planes would cross. Because we were "pulling them up close," Buddy set his mikes out at the same far points of crossing. Even at these "binocular distances" the pans were very fast. I look forward to the day when we will have motor turret cameras to catch those fast planes.

Reflectors were tabu in the daytime and lights were tabu at night overseas, so we had to resort to Coleman lanterns for interiors in the daytime. They worked very well, too. These are the gasoline lanterns we formerly used on fishing trips before the war. I got the idea of using them from a picture Henry Sharpe, A.S.C., made years ago in the hill country, somewhere.

During the African march of Monty's British 8th Army from El Alamein to Italy I was assigned to make a natural color feature of our 9th Army Airforce boys and bombers, which gave the British such heavy air support and close cooperation. The campaign was the turning point of the war, and the Allies first victory. We shot with Victor 16mm. cameras, using Kodachrome film. But we had no tripods. Everything we shot in 16mm. was also shot by other of our boys with Eyemos, using 35mm. film. Every scene, every combat mission, every phase of the airmen's life was covered to bring in every possible human interest angle. We gave the picture the tentative title "The Earthquakers." That remained as the final title.

During the photographing of combat missions over enemy installations, there is the constant fear that a key man may be hit by anti-aircraft fire or by bullets from enemy planes before the picture is finished. So, in the production of "The Earthquakers" I planned accordingly. My right hand man was Hugh (now 1st Lt. Wade, somewhere in the South Pacific). He was coached in every aspect of the job. In turn, he prepared Frank Goetz to take over his work in case he got hit.

It was not until the very last sequence to be shot that I "got mine," a slug of 88mm. from one of the Afrika Corps' anti-aircraft guns. For nine days I lay in a British medical dressing station directing the boys in the remaining scenes needed to complete the picture. I don't know whether they were as interested in reporting to me nightly as they were in my pretty little Irish nurse, but they reported, and finished the job in beautiful fashion.

From training and combat, by next assignment was to return to America and teach other boys. My preference was, and is, color. So, I took out my first color class one day. The G. I. lads asked if they might select their own subjects, to which I agreed. Then they scattered in all directions. The next day I viewed on our school screen the grandest array of girl pictures imaginable. From then on I chose their subject material. But I must say their photography was really pretty.

(Continued on Page 422)

*Cinematographers
Are Keeping Pace
with the
Continued Improvement
of*
TECHNICOLOR



TECHNICOLOR MOTION PICTURE CORPORATION

Herbert T. Kalmus, President and General Manager

(Continued from Page 420)



**These people buy a battleship
—every week!**

Meet John S. and Mary D.

John works at an electronics plant on Long Island, and makes \$85 a week. Almost 16% of it goes into War Bonds.

Mary has been driving rivets into bombers at an airplane plant on the West Coast. She makes \$55 a week, and puts 14% of it into War Bonds.

John and Mary are typical of more than 27 million Americans on the Payroll Savings Plan who, every single month, put half a BILLION dollars into War Bonds. That's enough to buy one of those hundred-million-dollar battleships every week with enough money for an aircraft carrier and three or four cruisers left over.

In addition, John and Mary and the other people on the Payroll Plan have been among the biggest buyers of extra Bonds in every War Loan Drive.

They've financed a good share of our war effort all by themselves, and they've tucked away billions of dollars in savings that are going to come in mighty handy for both them and their country later on.

When this war is won, and we start giving credit where credit is due, don't forget John and Mary. After the fighting men, they deserve a place at the top. They've earned it.



You've backed the attack—now speed the victory!

THE AMERICAN CINEMATOGRAPHER

*This is an official U. S. Treasury advertisement—prepared under auspices of
Treasury Department and War Advertising Council*

16mm. Color to 35mm.

(Continued from Page 407)

In view of the fact that Kodachrome had its first success in the realms of "you press the button—we do the rest," we are apt to belittle its unquestioned and varied uses in the professional field.

Kodachrome's history has almost paralleled the course of radio, but remember radio passed through the growing pains of crystal sets in the hands of amateurs—and now look at the darned thing!



Scene from "Frontier Bad Men", which is one of the latest releases from Bell & Howell Filmsound Library.

The many lessons learned in Hollywood, and taught here to the boys going overseas show clearly in every foot of film that comes home from the fighting fronts. We might well pause and consider the many problems our boys face away from home. The cameras with seeping desert sand in them. The jungles and their moisture. The fungus and rusty gears. The enemy and his persistence in trying to kill off the cameramen.

I'll never forget the first time I flew in over an enemy target. It was a beautiful, clear, sunny day, with pretty white clouds hanging high overhead. Below, the coastline lay bathed in brilliant sunshine as the white-capped surf spread itself against the flat sands of the beach. Suddenly I saw four little orange flashes. Looked as though four fellows were lighting cigarettes. Then, to the right, four more little flashes. Then I thought I knew the answer; a tank battle, with those on the right firing on those on the left. So, I raised my camera and pushed the button—fearlessly—and then, not a hundred feet directly in front of my finder, and right in the picture—KER—CHONG—BOOONG! A black puff, with red in the center, and little glistening pieces like those that fell off Christmas trees. Right then I stopped feeling fearless. From then on I was no hero. A man with a gun has the satisfaction of being able to fight back, and of momentarily looking away. The same is true of pilots and other crew members. BUT, the combat photographer must look directly and steadily (if possible) at whatever is headed his way, and the only solution to that problem is a hellava lot of heavy praying.

Now I'm back in civilian clothes, looking for a job. We had no trouble finding them in the Army, because we were all in the same boat. Here at home the returning ex-service man is out of the boat, and floundering in the water. It is all very new to us, and we don't have the old fight we went out with. So, if we have a little trouble coping with the problem of "finding a picture to shoot," or of naming "the last feature we shot," please bear with us. As more and more of the boys come back home, we'll solve that problem somehow, and try to get everybody "in the same boat" here in civilian life. As for myself, most of the "features" I made in the army during the last few years were "restricted films." If any producer wants to know the name of "my last feature picture," he will have to ask Col. Frank Capra, or Lt. Col. Robert Lord.

Broadway Cavalcade

(Continued from Page 405)

opportunity to show-off its wares, it also shares in the great profit taken in at the box office. When the movie crowds clamor to see a film on Broadway, many feel that deletions will be made when and if the film comes to their neighborhood theatre. This is not so, for they really like seeing their films on Broadway.

Answer No. 4 and No. 5: When the critics like a film, they have a way of telling about it, some by the half to four star method, others in praiseworthy words. Good reviews mean a heavy influx to the box office. Bad ones tend to keep the audience away from the theatre. Naturally, it effects the personnel in the film company for they have high hopes on all films and because bad reviews effect the income, the premiere money spent on it is usually wasted.

Answer No. 6; It affects the box office all down the line, for when the exhibitor learns the result, they pay for the film accordingly. A good film will play the best theatres and will be booked for the week-end showings, but the poorer film is played on the off days or the mid-week days.

Because it was a long time since I have been to a premiere, I decided that a check-up on a present day film should be part of this story, so I contacted one of the publicity men regarding the cost of a premiere of one of the late films, and I selected the film, "Song of Bernadette" which had its premiere at the Rivoli Theatre on Broadway, a short while ago. The figures, in spite of the war which restricted many items because of the shortage of materials, cost approximately the same. The sign cost \$15,000. The advertising space about \$20,000. Then, there was radio and much less billboard space. The entire cost was approximately about \$35,000 to \$45,000 to put the show on Broadway. Then as to the box office intake: the first week's income was \$70,000; the second week's income was \$67,000; the third week's income was \$65,000. By this time people began talking about the film and then they came, and the fourth week's income climbed to \$67,000 and so on up and up. With such income, film companies have an opportunity to get from Broadway alone, less the operating expense, a good part of the cost of the negative.

This will give you some idea of the cost and organization necessary for a World Premiere on Broadway, for Broadway is a show case where the film companies put their wares on display in the grandest style they know and they spare no expense in so doing. There is nothing too expensive for which any film company would not go to all ends to get for the pleasure of its patrons,



Official British Battle Photographer with his DEVRY 35mm. Camera



DEVRY 16mm. Camera

WHEREVER the fighting has been the thickest . . . wherever Allied arms have met their severest trials under fire . . . there DEVRY motion picture cameras have been found . . . doggedly grinding away to record the changing tides of battle . . . in living action and unforgettable sound.

DEVRY cameras accompanied Allied fighters to record:

1. Academy-award-winning "DESERT VICTORY"
2. and its successor, "TUNISIAN VICTORY"

. . . and DEVRY cameras . . . "manned" by the survivors of a hundred campaigns are still busy on a dozen fronts . . . preserving for posterity, in unchallengeable action, the relentless march of Allied arms toward Berlin and Tokyo in the final chapters of the greatest conflict in the history of mankind.

DEVRY equipment can TAKE it!

There'll be new DEVRY equipment by-and-by—New and Improved DEVRY 16mm. and 35mm. Cameras and Projectors that you'll find well worth waiting for.

DEVRY CORPORATION, 1111 Armitage Ave., Chicago 14, Illinois



DEVRY alone among motion picture equipment manufacturers has received the Army-Navy Excellence award three consecutive times.

BUY WAR BONDS



and these are no idle words. Some of our Broadway movie houses present the best in live entertainment along with the film. Omitting the film, you have a show equal to some of the best entertainment presented in the legitimate theatres where the charges are from \$1.20 to \$4.40 per seat. Movie stars, opera stars, comedians, dancers, ballet, scenery, music and a fine film is a choice morsel, which can boast of no competition in any branch of the show business and on Broadway, you get all

(Continued on Page 427)

Send in Your Pictures!

From time to time, we feel sure there must be some interesting still photographs made of the activities of the various amateur clubs. We will be very happy to print some of these in this magazine if you will send good glossy prints. You club publicists, here is the chance to really do something to get publicity for your organization. You have the pictures made and send them in, and we'll put them in the magazine.

—The Editor.

The Care and Preservation of Lenses

A PHOTOGRAPHIC lens is a precise optical instrument, and will provide a lifetime of useful service, but one must observe common sense precautions in its handling.

Do not wipe lenses carelessly with any available rag, handkerchief or tissue paper. For the removing of dust, grit, sand, etc., brush them with a fine camel's hair brush. Never touch the glass if you can possibly avoid doing so, but handle by the mount. Should fingerprints or grease spots nevertheless show on the lens surface, remove them in the following manner:

Dip a swab of soft, well-washed linen lightly in pure grain alcohol or ether, and clean the lens gently with it. Avoid touching the lacquered metal rims or mounts in this operation as the action of the chemicals may effect the lacquer.

To polish the lens, use a soft, clean, lintless cloth or specially prepared lens tissue.

Do not keep your lenses uncovered. Protect them from excessive heat, humidity and dampness. Use metal lens caps which protect them from dust as well as other dangers.

Should it be necessary to unscrew lens elements from the mount, be certain to replace them correctly. Thread them back carefully. Do not tighten them to an extreme point, yet be sure to replace them securely to prevent them from becoming loose. Even a trifling maladjustment will throw your precision lens slightly out of focus.

justment will throw your precision lens slightly out of focus.

Lenses, other than those intended for use with ground glass focusing back cameras (this includes 8mm., 16mm. and 35mm. movie cameras as well) are "set" at the factory, so they are in accurate focus for a particular make of camera. By "set" we mean adjusted for the distance between film and lens seat on the camera. The camera maker considers this one of the most important tolerances to maintain. If you know that your lens is in correct focus for a given distance, and your negatives are "unsharp," you may be sure that the tolerance is out, and both lens and camera should be sent to the factory for proper adjustment.

Presence of bubbles. In the manufacture of the types of optical glass from which the present day photographic lenses are made it is absolutely impossible for the glass maker to eliminate the presence of these air bubbles. Their presence, regardless of how many there might be, has so negligible an effect that they should be entirely discounted. They have absolutely no effect upon the functioning or correction, and the loss of light transmission is infinitesimal.

When lenses require repair or adjustment, return them to the manufacturer for these adjustments.

NOTE: The above advice on the care of lenses is reprinted from the American Cinematographer Hand Book and Reference Guide, written and compiled by Jackson J. Rose, A.S.C.

Are You Ready?

(Continued from Page 409)

edge of photographic chemistry—not a smattering knowledge—but a deep, well founded knowledge. Every cinematographer should know that the laboratory can add nothing to his film except that which he puts onto it by his determined exposure. And, if it is his desire to have his product given special treatment in its processing, then it becomes his knowledge of laboratory technique which dictates the special instructions and the compounding of the chemical formula that will produce the product he demands, in conjunction with his exposure. Otherwise the cameraman **MUST** balance his exposure to the established methods of the laboratory.

The basic importance of the third qualification is a knowledge of light, both artificial and natural. The lighting technique of a cameraman stamps his artistic and intelligent temperament. It establishes his dramatic instinct, whether it be that of tragedy or comedy. His lighting technique must be flexible enough to portray all the moods that compel human emotions. He must know when to apply telling methods of artistry with the distribution of his shadows and high-lights and effects of diffusion and filterage.

The fourth qualification means he must be metaphysically inclined toward men—to be able to judge their potential worth in association with him as his immediate assistants in the several departments under his control. He must be able to direct their knowledge and skill to the success of his ultimate objective. He must know their limitations, and be able to analyze their technical ability and make the best use of it without irritation. His success or failure, and the quality of the production photography entrusted to his care, will depend to a large extent upon his ability to secure efficient cooperation from the crew he has surrounded himself with.

The fifth essential of tact and diplomacy may be expressed more fully by saying it is the willingness to cooperate with every other individual who has anything to do with the production activity. This is especially desirable as concerns his working with the director. The director of production and the director of cinematography are two vitally important key men, and a close understanding between them often results in creative effects that exceed and outshine the original production plans.

The exercising of tact and diplomacy, however, must not overbalance the requisite of courage, the sixth qualification. If there is any doubt about the desired quality of any scene while in the making, the cameraman's courage

(Continued on Page 427)

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New Place For Aerial Camera

TO GIVE new punch and meaning to movies of aerial combat, the Fairchild Camera & Instrument Corporation's machine gun camera may soon be used from a new vantage point on war planes.

Usually installed in the wing or nose, this tiny three-pound camera is now being tried out in the tail of Mustangs (P-51s). With this arrangement, its 35mm film not only photographs for the record the flight-directions of bullets toward the enemy plane targets, but shows the pilot-gunner himself in action during battle. The resultant pictures are centered, instead of off to one side, and because the film includes the pilot, it gives a clear and comprehensive view of the action, heightening drama and data content of gun camera movies.

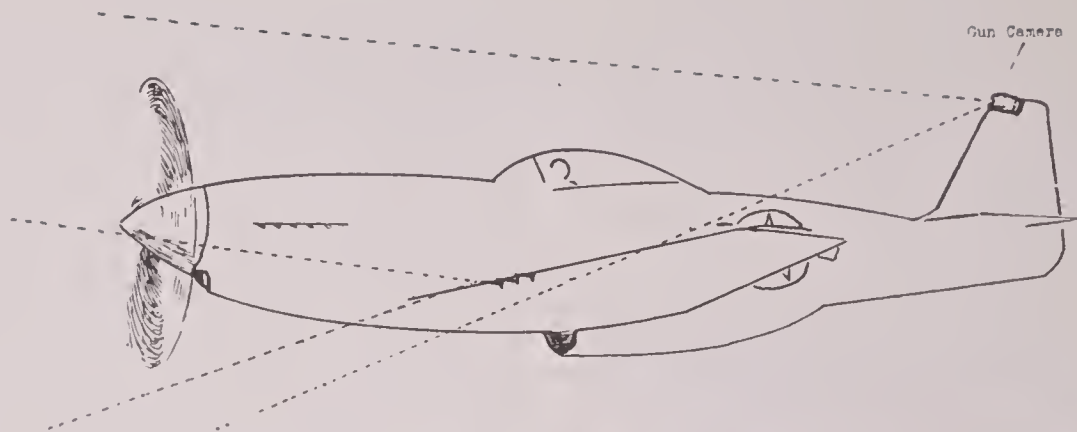
A still more important advantage of this new installation is that the camera, when placed in the plane's tail, is removed from the guns and engines. This reduces vibration considerably, and makes for sharper, clearer motion pictures. Also, the instrument is more easily accessible for boresighting, changing of magazines, and general servicing.

Report of the change came from R. A. Troidl, a Fairchild technical representative in the European war theater, who said the installation was devised in co-operation with a representative of North American Aviation, manufacturer of the Mustangs, and members of a U. S. Army Air Forces squadron. They removed the fairing piece of a plane and attached a camera blister, designed and made in the field, to the top of the vertical fin by screws, running the wiring down the tail and through the plane to the power source. The blister is so small that it does not alter the craft's aerodynamics in the slightest, Troidl said. In the new position, the camera is out of the way of dust and propeller wash.

The arrangement, a result of ingenuity of men in the field working with makeshift materials, is still in the experimental stage, but according to Troidl, reports of performance in actual use are entirely favorable. After necessary tests have been run off in the U.S. and certain readjustments made by the Fairchild company, the tail emplacement for the gun camera may become standard in all types of war front fighter planes.

Fifty Photographers Given P.S.A. Honors

Fifty photographers have been selected for honors this year by The Photographic Society of America, it is announced by Honors Committee Chairman Adolf Fassbender, F.P.S.A., of New York City.



Above is diagram showing where the gun camera is being placed in the Mustangs. Usually the camera was installed in the nose or wing, but now it is being tried out in tail.

Killed in Action

First Lt. Monroe Samsalig, formerly Shipping Clerk for S.O.S. Cinema Supply Corp., was killed in action in France, the War Department reports. Lt. Samsalig was the first to enter the Service from S.O.S., having been called up September, 1940, at which time he was a Sergeant in the New York National Guard, 165th Infantry, known as the "Fighting 69th." S.O.S. has 22 of its employees still in the armed forces.

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Ansko Promotions

APPPOINTMENT of a new regional sales manager of the West Coast and promotion of a member of the sales department to the district sales managership at Los Angeles, California, are announced by Ansko.

Frank J. McIntyre, formerly district sales manager in the Chicago area, is now in charge of sales in the West Coast area, including the San Francisco and Los Angeles branches, and Ansko's offices in Hollywood, which serve the motion picture capital.

George Alexander, who joined the company in 1941 as a technical advisor and sales representative, now directs the Los Angeles branch.



Leo J. Polubicki and E. S. Schweig (left); and John Lang and Joseph Netzel (right) all 25-Year Men, join in informal hand-shaking ceremony between Chief Naval Inspector T. W. Daniels, for DeVry plants, and DeVry president, William C. DeVry, on the occasion of the raising to its company masthead of DeVry's fourth Army-Navy "E" award for production excellence.

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Plan Your Xmas Movies

(Continued from Page 408)

smooth boards on the floor as a track. Then you can slowly move into a closeup, or can dolly back. Or you can start with a full scene showing the entire set, and dolly slowly up to a closeup of one of the houses where the lights is streaming out of the window onto the snow. Then you can either dissolve or cut to your own family actually sitting before the open fire in your own living room.

If it happens to be snowing at your place on Christmas, you may photograph one of the miniature automobiles in which you have placed several tiny figures of people. You follow the car down the street, and then cut to a scene in your own driveway where your

family or friends are actually piling out of their snow-covered automobile. From there you can photograph the arrival of them at your door, take them into the house, and then go right on filming your Christmas party, or what have you. You will find this miniature setup will make your Christmas movies more interesting, and will give you the opportunity to do more unusual things photographically than you would ever suspect. BUT you have to *plan* your movie, otherwise you will wind up with just a lot of shots. I suggest you prepare a script for your entire day and evening shooting.

I imagine that most of you who do take my suggestion will want to make still photographs of the set. I hope you do, for the Editor of the American Cinematographer has just told me that he will give a year's subscription to the magazine to the person who sends in a picture of what he considers the cleverest Christmas setting. So, be sure you send in the photographs. Incidentally, the most novel will be reproduced in the Cinematographer when the winner is announced.

Go to it, you home movie enthusiasts, and may you all have a very Merry Christmas.

Arling Back

Lt.-Commander Arthur E. Arling, after three years active duty in the U. S. Navy, which included several months in the Pacific combat zones, is being released to inactive duty status, and is re-joining Technicolor Corporation as a Director of Photography.

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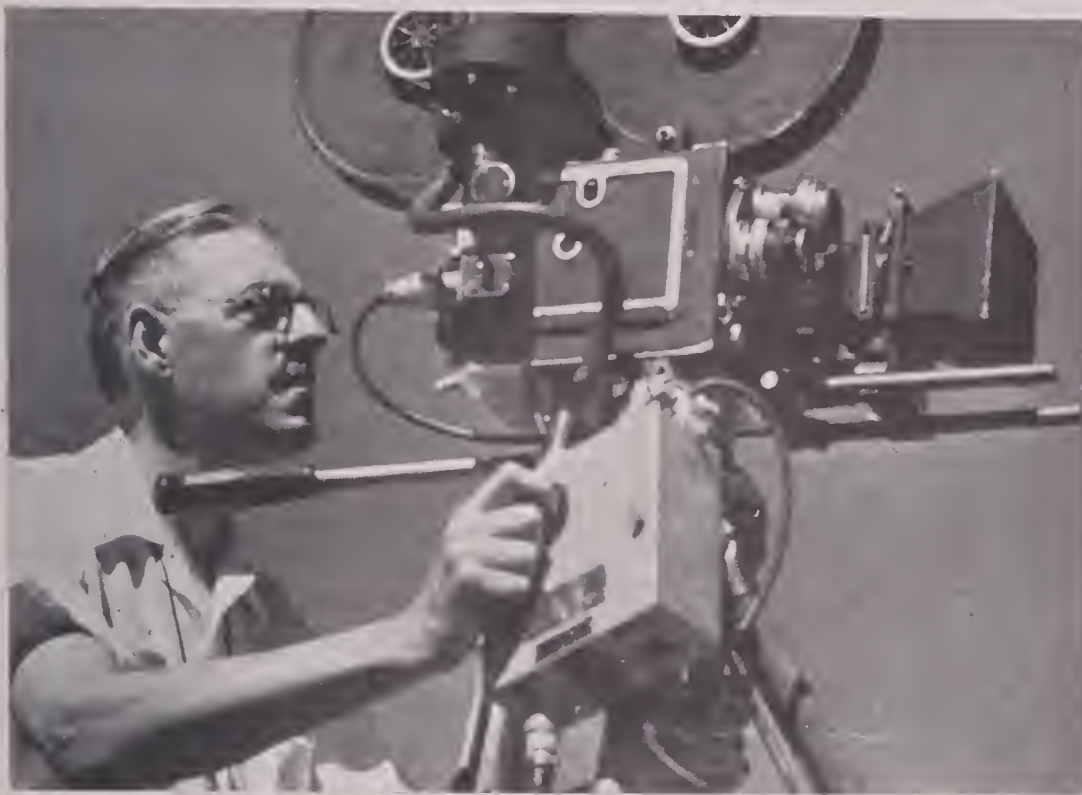
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Alfred Jacquemin, A.S.C.



LATEST Canadian cameraman to be granted membership in the American Society of Cinematographers is Alfred Jacquemin who has just been made a member of the organization.

A veteran in years of experience in motion picture work, Mr. Jacquemin's honor follows seventeen years' service with Associated Screen Studios, Montreal, and nine years in Hollywood. Prior to that he was engaged in motion picture work with Gaumont in France, and by the French Government on official films during the first World War. He was in charge of camerawork on a special expedition to Alaska a number of years ago, photographing wild animal life and later spent four months in

Northern Ontario making natural life movies of beavers for the Ontario Government.

Jacquemin joined the staff of the Associated Screen Studios in 1927. His "Royal Banners Over Ottawa" was the only theatrical release, in color, of the visit of the King and Queen to Canada, the Royal premiere being held in London shortly after Their Majesties' return from Canada. His studio camera work contributed much to "The Thousand Days," an Associated Screen review of the first three years of war, which was accepted for distribution in the United States by the Office of War Information, and was televised from New York.

Broadway Cavalcade

(Continued from Page 423)

this. If you have never attended a premiere and do not have an opportunity to do so, then, when the next big film that has had a Broadway premiere comes to your town, go to see it. Sit back in your seat, and enjoy the biggest show in town, for these pictures bring to you the works of the best authors, the newest processes and experiments. It was through the persistence of inventors of the past who made possible the advent of the film, sound on film, the breadth and opportunity for color in films.

Through this experimental showcase the industry found that it pays to spend \$1,000,000 or more on the production of films. Because of these experiments the film companies find out which are the best to serve you, for had it not been for experimenting in the past, we might not have had the electric light, the automobile, the aeroplane. Yes, we might not yet have had the movies.

Are You Ready?

(Continued from Page 424)

must be of the quality that will prompt him to order or demand the stopping of the work until proper corrections can be made. There is no compromise on this score. By the same token, he should be positive in his demands for proper equipment with which to produce the quality of product insisted upon by the producer.

The seventh qualification demands the undivided attention of the cameraman in the interest of the production to which he is assigned. Again, his tact and diplomacy comes into play in his offering of constructive criticism. Regardless of the number of picture productions the director may have made, it is usually equalled by the number of credits listed to the cameraman. If he is a man who has prepared himself for this job, and

(Continued on Page 430)

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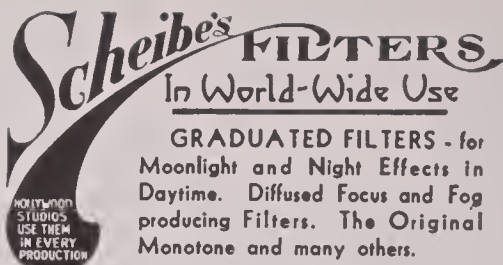
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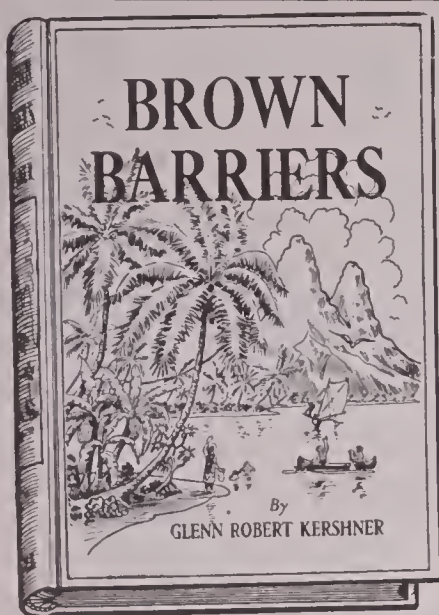
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(Continued from Page 427)

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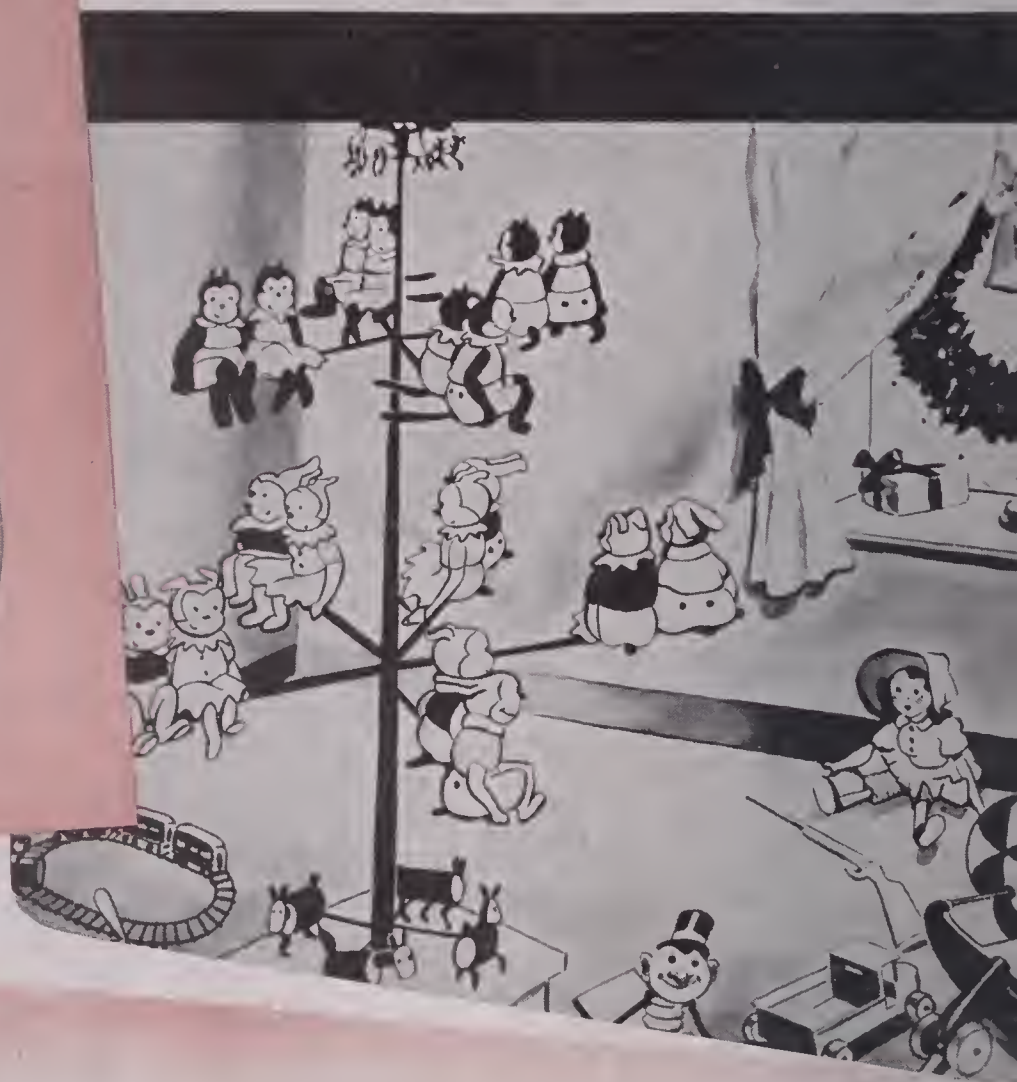
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